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FOREWORD

INNOVATIONS in all spheres of national life are needed urgently by our old, traditional society struggling to catch up with the rapid changes and new vistas suddenly opened to contemporary man in a world now more unified than ever before by the inexorable march of science and technology and the spread of common ideas and universal human values. This situation—often described as the process of modernisation—confronts all developing countries of the world. Tradition must adapt itself to the new forces of change or perish, the challenge faced by the developing countries is nothing short of building upon the roots of their old cultures, modern societies in tune with new aspirations and exploiting the immense possibilities generated by the scientific and technological revolutions of our times. To meet this fateful challenge, developing societies often largely illiterate and extremely poor, require intelligent, resourceful and bold leadership. The immediate need for a new elite gives special importance and urgency to the nature and quality of higher education, and the transformation of institutional structures inherited from the colonial or feudal past. Innovation becomes a matter of survival and the essential condition of progress.

The odds against innovation in general continue to be heavy in India. Traditional modes and institutions are hard to change and the path of modernisation is not easy in the absence of adequate and right type of education and the essentials of an infrastructure of material and moral development. The revolution in communication has disturbed the stability of traditional societies and has even shaken their cultural roots, but there is little evidence of the planned and purposeful use of the new communications for releasing the vast human energies needed for quick development. Lack of sufficient material resources for rapidly increasing needs is glaring and it is difficult to accomplish even the tasks to which the highest priority is universally accorded. Even more serious is the neglect of building up the moral and intellectual resources, relevant institutions, creative leadership, and wise and enlightened management on which depend ultimately the success

of any plan of national development. Problems of planning, research and institutional infrastructure remain unsolved, causing confusion in the choice of priorities and delay and waste in the implementation of plans.

It is in the context of these general difficulties and obstacles that one has to view the specific problems of higher education. More than three decades of my association with Indian education, both as a university teacher and as an educational administrator, have revealed most formidable difficulties in the way of changing the content and quality of higher education. Nine major difficulties encountered in the process of reform and innovation are briefly stated below in general terms. These are derived from my Indian experience, but are generally valid for other Asian countries as well.

1. Confusion of aims resulting in the lack of clear-cut policies and choices persists and the necessary effort to resolve some important issues has not been forthcoming. The basic question whether higher education should be restricted to those who are fit to receive it and are required for jobs available or it should meet the explosion of numbers and aspirations, irrespective of the availability of minimum facilities and specific requirements of employment has not been answered. Would it be better to follow the selective principle and concentrate scarce resources on building up a few centres of excellence rather than distribute resources equally among an ever increasing number of institutions? The respective claims of elementary education, middle level education, higher education and adult education are seldom estimated correctly in terms of social needs and the requirements of development. The links between these levels and their effective coordination is not adequately explored and clearly established. Policy decisions emerge haphazardly out of a welter of circumstances and complexity of pressures, responding more to the exigencies of the moment than to carefully prepared and long-term plans of development.

2. Policies are, therefore, often based on wishes and slogans, and seldom on the objective understanding of facts and motivations. Within the framework of political life and power structures,

ministries of education are comparatively weak and educators are seldom given the status and rewards that go to civil service administrators and other bureaucrats and professional groups. The political strength and national authority wielded by an education minister is often a decisive factor in bringing about change and innovation but it is rare for an education minister to command such a position.

3 Higher education is fragmented and placed under the control of various government departments such as Education, Health, Agriculture, Labour, Commerce, Industries and Defence. Sometimes even a bifurcation between science and technology and general education takes place. The coordinating machinery is either non-existent or ineffective. This state of affairs mars thorough planning as well as effective implementation. Above all it leads to a failure to integrate higher education in national planning resulting in unemployment of graduates, wasteful duplication of efforts and lack of adequate mobilisation of scarce resources.

4 Paucity of material resources is undoubtedly a great obstacle to innovations that often cost money. Increasing population, slow growth rates of economic development and inadequate priorities accorded to various forms of higher education have hindered qualitative improvements while large expansion of numbers goes on at increasing tempo. Little is left for raising the quality of higher education after the pressing claims of mass education at all levels are met by political leaders. The growing awareness of the value of higher education in terms of investments in economic and social growth and its central place in the development of human resources will certainly lead to larger financial allocations but for a long time to come sufficient money will not be available and more reliance will have to be placed on better planning, on greater efficiency in implementation and the development of the skills and attitudes required for resourceful management and purposeful change.

5 The widening gap between planning and implementation is in fact the most crucial problem of reform and innovation and lack of money is not the only factor responsible for the

present state of affairs. Thoughtful people in all walks of life are poignantly aware of the glaring gap between thought and action which has assumed the proportions of an epidemic and is listlessly accepted by all concerned in a continuing mood of despair and fatalism. Reports and recommendations abound and commissions and committees confer intermittently to examine the same problems, the innovative action that emerges from these exercises is remarkably small, and it is even accepted cynically by those in authority that a full and genuine implementation was never intended. The status quo persists tenaciously till its irrelevance and unworkability make it meaningless. Better planning, action-oriented research, wise and speedy implementation with constant evaluation in view, the method of decentralisation both in planning and in implementation, and a spirit of dedication on the part of those responsible for higher education are sorely needed for giving reality to reform and a fair scope to innovations.

6 There is much talk about the spirit of dedication, which is frequently referred to in clichés and platitudes that have become the stock in trade of politicians who continue to pronounce on all educational problems without sufficient understanding of their complexities and implications, and especially of the needs and aspirations of those directly concerned in the process of education—students, teachers and administrators. Lack of any deep involvement in the nature and process of social change on the part of young people, their teachers and parents, administrators, politicians and policy-makers, results in confusion and inertia. This is indeed a most discouraging sign of the times. Little is attempted to develop meaningful communication, mutual participation, and smooth coordination that are needed to generate a new sense of purpose and fulfilment. Educational authorities continue to be relatively weak elements of national establishments and receive insufficient attention and backing from public opinion and from the makers of overall policies and dispensers of public resources. In this state of neglect, confusion and fear, the institutions of higher education lose any vitality they may have possessed and cling to their rights and privileges without manifesting any strong will for change and improvement.

7. The resistance of vested interests to change, and especially the deep conservatism of the university persists tenaciously. There is urgent need of change from within, but the signs of accepting and creating new ideas are not encouraging. The interference of governments in university affairs is matched by the indifference and passivity of universities. The dependence of the university on government increases, the interferences of political parties often create vicious situations, and within the governance of a university there is little scope and few incentives for experimentation and the search for quality. Petty intrigues and power politics often vitiate the functioning of universities and undermine their role of setting standards and propagating values for the larger society. Hardly any significant attempts have been made to link the university with the community around and the academic ivory towers often shelter mediocrity and a suffocating emptiness. The fresh breezes of change seldom blow into these citadels of tradition and privilege.

8. While the use of new technologies for opening up universities to the fast accumulating knowledge and its application to the life and values of contemporary man is now easily within the reach of reformers and innovators, little has been done even to promote the methods and facilities of self-education, and to bring within the fold of a university the larger community in search of life long education. The student teacher relationship needs some drastic changes and a fresh orientation, but these developments are not much in evidence. There has been some considerable improvement in the emoluments of university teachers, but their increasing involvement in personal research and public affairs weakens the most precious element in education, the intimate contact between the teacher and the taught. Fortunately television can now bring the most dynamic teachers closer to a vast audience, and modern libraries and computers open new possibilities for self education.

9. Finally, in India as in other countries of Asia and the West, the new attitudes of youth to society, expressed in apparently different forms and manifestations of discontent, but sharing basically a common outlook of humanity and sincerity, must influence the development of new patterns of higher education.

and the role of the youth in the transformation of society. The so-called Student Revolution of our times calls for a better understanding of the contemporary youth and the fascinating problem it presents to society. There is need for closer communication, deeper understanding and imaginative action on the part of all concerned in the process of higher education and this is one of the major challenges of the seventies into which we have entered after the celebration of the International Education Year.

I have referred to the above mentioned obstructions to change and innovation in the field of higher education and the difficulties encountered in the process of reform in order to highlight the need and urgency for constructive action. No doubt, something has already been accomplished and some promising trends are to be welcomed. One of these hopeful signs is the increasing interest of comparatively younger scholars in various aspects of higher education as exemplified in the thought provoking essays that follow in this volume.

Dr. Gobind Singh Mansukhani and his associates who have contributed to this volume have done commendable service to the cause of higher education. The topics discussed are well chosen and the readers of these essays will find useful materials attractively presented with a view to stimulate wider and deeper reflections on problems that lie at the heart of change and innovation. The present publication is intended to be the first of a series entitled 'Studies in Indian Education'. If the succeeding volumes sustain the quality and interest manifested in this book, the new series will provide valuable materials on Indian education both to the general reader and the specialist.

The problems discussed in this book concern all developing countries of Asia and Africa. I am sure this publication and the others already planned will be of considerable interest to administrators and planners of education in these countries.

New Delhi
January, 1972

PREM KIRPAL
Chairman
Executive Board UNESCO

PREFACE

THIS book is the first in the series—*Studies in Indian Education*. The object of the series is to examine in a broad prospective the complex issues facing education in India at all levels viz primary secondary and higher. Owing to a variety of considerations, we have made a beginning with higher education, which is the apex of the educational pyramid. The central theme of the present volume is to analyse critically the problems of university and collegiate education. It is often said that in the wake of the spectacular growth in the student population in our universities and colleges, there has been a gradual deterioration in the quality of higher education, mainly because the physical and academic facilities have not been commensurate with the pattern of growth. It is also said that the recent advances in science and technology and even in the field of social sciences and humanities have made our curricula irrelevant to the needs of a modern society. The present volume deals with many of these issues and suggests possible measures and directions of improvement to enable us to realise our national goals and fulfil our social needs.

The first section on the Crises in Indian Universities poses some of the major problems confronting our universities. These are related to problems of the medium of instruction, examination and changes and innovations in curricula. There is no cut and dried solution for the complex and difficult situation in which the institutes of higher learning find themselves. While we do not suggest that the problems are entirely due to the paucity of financial resources, the rise in the cost of higher education and the meagre outlay available to them is the crux of the problem. With the dwindling fee incomes and lack of private philanthropic enterprise universities and colleges are becoming increasingly dependent on public funds. Since public funds for education are determined by other impelling considerations education as an investment in human beings does not receive its due priority in the context of an underdeveloped economy. This constitutes a serious threat to university autonomy—both internal and external and has been discussed in section two of this book.

The third section deals with the oft repeated allegation that our standards are falling. Are standards really falling? And if so, in what aspects? This question has to be examined objectively on the basis of available data and reports. This brings us to the related question of examinations, which are crucial in the maintenance of standards. While there is a wide-spread interest in examination reform, have the universities taken adequate measures in this direction? Are examinations suitable instruments of testing? How are we to deal with wastage in higher education in the context of the open door policy of our universities? While on the one hand there is pressure on the universities and colleges for admitting more and more students, does our socio-economic system offer sufficient opportunities for the employment of trained manpower?

The next section deals with two related problems viz. the expansion of educational opportunities through non traditional methods like the open university project and the role of universities in adult or continuing education. It is being increasingly realised that universities have a special responsibility to bring new knowledge and techniques to the community, so that extension programmes bring their fruits to the farmers and factory workers. Colleges also have a similar responsibility to the community around them. This problem is dealt with in the chapter on the College and the Community. It suggests ways in which the college can serve the community and be an instrument of social change and welfare.

The problems of affiliated colleges—their number is now 3604—are considered in the next section in all their ramifications and in their relationship with the university. Here the important question is the priority that should be given to the development of collegiate education, in view of the important fact that 88% of our students are in the colleges and no improvement in higher education is possible unless our efforts make an impact on this sector of higher education. There is also an urgent need for evolving a new kind of relationship between the university and colleges so that the colleges feel that they are an integral part of the university system and not merely connected to them through tenuous bonds of affiliation.

The section on Students' Violence deals with the basic causes of student discontent, which is gradually becoming a world phenomenon. This underlines the need for a continuous dialogue between

the teachers and the students and for student participation in the decision making bodies of the university. Though student participation has been agreed to in principle, ways and means have to be devised to make it meaningful and effective. One feasible approach would be to plan the participation of the students in the important decision making bodies of the university like the Executive Council and the Academic Council, step by step after gaining some experience from the experiments already made by certain universities.

The problem of the segregation of sexes has to be tackled with sympathy and understanding. Opportunities for friendly conversation and interaction may make university life more interesting and rewarding. Simultaneously, the role of women in higher education and their special needs have to be analysed. With the equality of status guaranteed by the Indian Constitution women have to be encouraged and given increasing opportunities for playing a significant role in university education.

The different sections in the book have been attempted by educational experts on the basis of their experience and studies. They deal with the problems in an analytical and functional manner and suggest various measures for meeting the new challenges. If the book succeeds in stimulating serious thinking on the problems of higher education, they will feel amply gratified and rewarded.

I express my gratitude to Professor D S Kothari, Chairman, University Grants Commission for his encouragement and guidance in the preparation of this volume. Many of the ideas presented in the book are based on his original thinking as reflected in his published speeches and the report of the Education Commission. However, the views expressed by the writers are entirely their own and do not represent in any way the policy or the thinking of the University Grants Commission. I am also grateful to Dr P N Kirpal, Chairman, Executive Board UNESCO Paris, for writing the Foreword to this book. His experience as an educational administrator in India enriched by his global expertise through UNESCO is reflected in his observations in the Foreword.

My thanks are also due to Mr. M.L. Gidwani, Production Manager, Oxford & IBH Publishing Co., New Delhi for taking an extra interest in designing the lay-out of the book, and bringing out this publication in a short period of time.

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1. Crises in Indian Universities

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WE read in the newspapers of student demonstrations violent clashes *gheraoes* of Vice Chancellors and faculty members burning of university property and public transport and entry of police and sometimes army units into the campus to put down students violence It has almost become customary to put the blame on politicians and on the youths as also on the generation gap the general deterioration of discipline the waning of the influence of parents and the arbitrary demands of students The crises in the university is multi dimensional and cannot be dismissed as the offshoot of mis guided youth or high jinks The malady is deep rooted something is definitely wrong with the university system otherwise there is no reason why brilliant students with distinctions in examinations should turn Naxalites and engage themselves in dangerous anti social activities

The causes of the crisis in the university have been analysed by eminent educationists but no serious attempt has been made to save the present explosive situation in Indian universities

Due to the population explosion, the hulse in university admission has been phenomenal. While the increase in university enrolment in the developed world has been an annual 6.6 per cent, in India it is double this figure—13. Moreover, the democratisation of education and the socio-cultural demand by the rural population has led to the intake of students whose parents have no background of education and who have no aptitude for the courses they take. Besides this, the prolongation of the students' stay in the university due either to affluence or lack of job opportunity has proved a strain on the university's resources. This over-education of the young has seriously affected the efficiency of universities. If the universities are to play an effective role in providing leadership and manpower requirements, it is essential that the admissions have to be cut down drastically through rigorous screening and aptitude tests to ensure that only those are enrolled who are talented and motivated for higher education and who will be able to get jobs or gainful employment after they come out from the universities. The Education Commission remarked: "A stage has now been reached when the policy of selective admissions will have to be extended to all sectors and institutions of higher learning. If the present rate of expansion (at a minimum of 10 per cent per year) is assumed to continue for the next 20 years, the total enrolment in higher education would be between seven and eight million by 1985-86 or more than twice the estimated requirements of manpower for national development. An economy like ours can neither have the funds to expand higher education in this scale nor the capital to find suitable employment for millions of graduates who would come annually out of the educational system at this level of enrolment." This anomaly is due to the 4 to 6 per cent growth of Indian economy as compared to 10 to 13 per cent expansion of university enrolment. It is necessary to co-ordinate university admissions with man-power requirements as is done in some western countries. It is no use manufacturing unemployable and unwanted graduates who will eventually be the breeders of revolt and revolution.

Enrolment balloons

It may not be possible to establish new universities or new colleges to mop up the growing student surplus in view of our

limited resources. At any rate, it may be feasible to allow private students to qualify for degrees and this will reduce the over crowding in the universities. Let the non-serious students remain at home or do their studies through correspondence courses instead of disturbing the quiet of the campus through disruptive activities. Dr M S Adiseshiah, Deputy Director-General, UNESCO, has analysed this problem in his book entitled *Let My Country Awake*. He writes, "But little has been done to prepare for and respond to this ballooning of the student population and its educational impact on the university. Rather, one reaction has been to neglect the large mass of undergraduate and concentrate on prestige graduate courses and financially rewarding business and government work under contract or financial grants. This situation is literally like sitting on a powder keg with a lighted candle. It was bound to blow up and it has"* In a similar vein Dr K G Saiyadain wrote "We are unhappy about the swollen institutions, the business and Government financing, the divisiveness of administrative roles, the lack of personal contact, the specialist pride of Faculties, the closed minds of students"†

It will require a lot of courage to resist pressures on university admissions. The university authorities and the University Grants Commission could strictly enforce a policy of restricted and selective admissions in order to provide education to those who deserve it. Instead of applying the butter too thinly on many loaves of bread, let one loaf of bread be adequately buttered for providing nourishment.

Faculty competence

Moreover, the university faculty must set its own house in order. Undoubtedly the teachers deserve higher salaries and more amenities, but let them try to meet the intellectual challenge of our time. * Knowledge grows and skills multiply, but the teacher and his books limp woefully behind. As the volume of knowledge normally doubles every ten years, the teacher who

* M.S. Adiseshiah *Let My Country Awake*, p. 241

† K.G. Saiyadain *Universities and the Life of the Mind*, p. 152

got his Master's Degree 30 years ago, is very much back-dated in knowledge and until and unless he keeps himself up-to-date, his knowledge will be of no use to the students. His books, his references and his research have become antiquated and if he is to perform his teaching function adequately, he must constantly learn and replenish his knowledge. Why not introduce the system of appointment on a tenure basis or on contract? This will mean that a teacher will have to be on his toes all the time and show his competence or quit. Security of service may be a great handicap in weeding out indifferent and incompetent teachers. Of course, the conditions of service—whether on contract or on permanent basis—affect all sections of the public services, yet it is desirable that teachers—who are the makers of the younger generation—should voluntarily undertake to set an example of professional competence. Is the Faculty prepared to meet this intellectual challenge?

The other crisis in Indian universities pertains to research. In an ideal situation, teaching and research would go together. Most of the university teachers do very little research, college teachers do even less.* This is confirmed by the UGC Report on Standards of University Education which mentions that except in very few colleges research facilities are totally non-existent†. This may be partly due to the great load of teaching work and lack of resources for equipment in the affiliated colleges. The financial support by the UGC to research work by teachers every year is limited to less than a thousand scholars—the awards were 867 in 1970-71 in addition to 120 junior and 60 senior fellowships in humanities and sciences excluding 60 fellowships in engineering and technology. It is learnt that while the research enrolment during 1970-71 in university departments was 11774, in affiliated colleges it was only 1838. Out of the total of 129000 university and college teachers during 1970-71 hardly 5 per cent are engaged in active research. Applied and technological research is out of bounds for academic institutions. It is on account of the lack of research facilities—partly due to inter-departmental hierarchies and discriminatory

* *Minerva* Vol VII No 3 (1969) p 360

† *Report on Standards of University Education* p 41

attitudes—that many teachers join other organisations like the Atomic Energy Commission, Council of Scientific and Industrial Research, and Botanical and Geological Surveys of the Government of India. Many teachers go abroad for purposes of research. This situation of lack of incentives for the young and the fading of intellectual energies of senior scholars—"very few produce new works after their first research thesis"*—can be attributed to the absence of intellectual climate and encouragement for creative work.

Moreover, the modern concept of teaching and learning involves a new relationship between the teacher and the taught. Teaching and learning is a joint function because it widens the horizons of both the teacher and the student. The student learns by asking question, the teacher learns through the dialogue he has with his student. With the growth of new techniques of teaching and teaching-machines, the faculty has to change its approach to the students. The new information system, namely, the computer and the card selector, makes communication easy and the task of the teacher is to go on relating this information and to make it serve a useful purpose.

Basic contradictions

The other cause of the university crisis is the ethical challenge which the modern world faces. The student finds a disparity in the academic knowledge and the environment around. While he studies the ideas of equality and dignity of the individual, he finds discrimination, nepotism, favouritism and contempt of human values on the campus itself. The double standards confound him. The dichotomy between the high ideals of the university and the hypocrisy and intrigue of academicians and administrators in day-to-day life, make him feel cynical and he questions the facts of life around and begins to feel that the basic issues are being side tracked and that there is something wrong with the system.

The swing from the study of science to the study of humanities and social sciences is another pointer to the impending

crisis. It is the humanities which supply leadership in human affairs, while sciences supply specialists. The belief that science can provide solutions to man's problems of poverty, hunger, peace, etc. has been shattered. The United States of America is highly advanced in science and quite affluent, but has it solved the problem of unemployment, race relations and campus violence. The student finds himself in the midst of intrigue, wastage, squalor and injustice and realises that science can offer no remedies to these patent evils. Moreover, there is lack of confidence between the students and teachers, between university and Government authorities, between parents and children. The teacher—because of his lack of commitment to the profession—has hardly any control over students. He is "no longer accepted in the father image"* The parent is no longer the source of wisdom and hence commands no respect of the children. This lack of trust has led to the estrangement between the youth and adults. The problem is how to bring them at least to the situation of a dialogue.

The other cause for the crisis in universities relates to governance. In the beginning the Government administered the university with little success. Subsequently the faculty which took up the responsibility of running the different decision-making bodies of the university found that they had hardly any influence on the pupils. Youth politics and party interests poisoned the academic life at its source. The Chancellor as the head of the State hardly fits in the new democratic set-up. The academicians are divided into groups and factions on the campus. Moreover, the students pursuing studies demand a share in the policy making bodies of the university. Student power as a challenge to authoritarianism is a force to reckon with. Here and there some concessions have been made to democratise the administrative organs, but until and unless student participation is effective, students will not be content with playing the second fiddle in academic bodies. The entire machinery of university governance has to be over hauled in order to provide a smooth, stable and democratic functioning of the various parts.

* Saha and Gangrade *Inter generational Conflict in India* (1971), p. 248.

† David Martin *Anarchy and Culture* p. 174.

of the university. There is a unanimity of opinion on the entire take over of residential problems and extra curricular activities by the students. The Faculty Adviser is a nominal figure—head to see that nothing untoward happens.

A committee appointed by the University Grants Commission has recently recommended the establishment of Student Advisory Committee of Faculties and joint teacher student committee of departments. It also favoured consultation with students on the structure of courses, the contents of the syllabi and of examinations and for this purpose agreed to their representation (10—15 per cent) on the University Court*. The committee was not in favour of student representation on the Academic Council and the Executive Council. Instead it recommended the setting up of a Students Council which could make its recommendations to the Executive and Academic Councils. Attempts to modernise courses or to introduce training programmes for specific jobs should be the main concern of staff student collaboration. Perhaps the aspirations of students would have been satisfied if some representation on the Academic Council had been conceded to them, particularly when their participation could have been valuable in restructuring syllabi and providing new fields of job-oriented training.

The participation of students in academic work helps both the teacher and the taught, it encourages the student to shoulder responsibility and develop his personality while the teacher benefits from the modern outlook and fresh ideas of the student. The machinery for consultation in academic matters may help in getting rid of outmoded syllabi and irrelevant courses. At the same time care must be taken to see that student participation improves the standards and does not lower them. A demand like the lowering of pass percentage, liberal award of grace marks and cancellation of an alleged *stiff* question paper must be discouraged as it only helps dilution of standards.

In this connection the experiments made by western universities may be helpful. In some European countries like France

* Report of the Committee on *Governance of Universities and Colleges* Part I (1971) p. 76

and Italy, proposals have been implemented for joint staff-student committees on the basis of parity, to decide all matters concerning the university, including finance, administration, admission and selection, curriculum and methods of examinations, employment opportunities and guidance at all levels—departments, faculties, and postgraduate centres. The underlying principle is that students together with teachers must be made basically responsible for the governance of the university.

Dead wood

The university must get rid of the backlog of traditional practices which have lost all significance in the modern age. Take for example, the ritual of the convocation. The university students in recent weeks created disturbances in the convocation functions and in some cases disrupted the award of degrees. In December 1970, the students of the Rajasthan University succeeded in preventing the holding of the convocation function*. At the convocation of the Utkal University held on 20th January 1971, at Bhubaneswar, the students showed disrespect to the organisers and deprived the function of its decorum and solemnity. The graduates did not wear the traditional gowns and one of the graduates went up to the dais and tore off his diploma shouting that there was no use for it. More confusion arose at the time of the presentation of candidates by the heads of departments. The prescribed formula was uttered by a few in English, by some in Oriya and by a few in Bengali. The Chancellor, Dr A. A. Ansari, spoke in Hindustani because he did not know either Oriya, Urdu or English. The speaker of the Lok Sabha (Shri G. S. Dhillon), addressed the convocation in English because he did not know Oriya†. Such incidents show that the convocation function has lost its significance and this unnecessary ritual—a cause of students' discontent itself—should be discontinued. It is reported that Kerala University has recently abolished the convocation.

The major cause of university crisis is the defective university education system which has been condemned by academicians,

* *Times of India*, dated 20th December 1970.

† *The Hindu*, dated 22nd January 1971.

educationists and students. It has no relevance to our needs and is a mere imitation of western models. Sir Eric Ashby, an eminent British educationist wrote about Indian universities thus: "the universities remain alien implantations, not integrated into the New India as the writers of the Radhakrishnan Report hoped they might be. This is one reason why, to the observer from outside, the Indian intellectual remains a culturally displaced person, nostalgically treasuring his threads of communication with England. Notwithstanding the fact that the leadership of modern India is in the hands of statesmen more intellectual than perhaps are to be found in any other nation, there is in India (as Edward Shils recently wrote) 'no intellectual community'. This is due in part to the lack of a hierarchy of cultural institutions in the country and this in turn is related to the fact that the universities have responded too weakly to the challenge of Asiatic culture".^{*} Many educationists have emphasised the need of the return to "Indianness" so as to make the system responsive to our own conditions and requirements. Ross, who made a study of student indiscipline in India affirmed that the students found their studies so dull and unrelated to their own existence that they joined in demonstrations to get relief from boredom.[†] It has been suggested that all degrees should be job oriented and there should be employment opportunities for students coming out of colleges. There is some scope for increasing employment in agro-based industries, tool and dye making, electronics and chemicals, in housing projects, in literacy programmes and in skills such as tailoring, carpentry and plumbing. It has been suggested that on the lines of a recent movement in USA[‡] for students taking to active outdoor politics, the students in India, specially the postgraduates who cannot find jobs may enter the Parliament and raise their voice for the reconstruction of the educational system because it is feared that the older generation has no interest in scrapping the present irrelevant system of education with all its inefficiency, over-crowding and terrible boredom. Moreover, the new class of university entrants—students from rural areas or backward communities hitherto

* Report of the Education Commission (1966) p. 277

† A. D. Ross, *Student Unrest in India* (1969) p. 256.

‡ *Amrit Bazar Patrika*, dated 12th November 1970

deprived of higher education—question the value and utility of their university education because their families can spare them only at tremendous sacrifices

Another crisis in the university is that of standards. With the introduction of regional languages as the media of study and the provision for denominational and minority institutions teaching through their own media, there can hardly be any uniformity either in the system of instruction or examination. The use of the regional medium prevents the mobility of teachers and students. What is the standard of a B A /B Sc /B Com? Is there a yardstick to measure the attainment of a graduate? It is high time that a central body like the UGC should consider the matter afresh in the light of the decisions of the judiciary permitting linguistic and cultural minorities to give instruction in their own languages and find out a practical solution which may help in maintenance and even the raising of standards. This is one of the major statutory functions of the Commission. According to the information available, 57 universities have allowed Indian languages as media of instruction for a number of courses at the undergraduate and postgraduate levels. In order to meet the need of textbooks in Indian languages at the university level, the Government of India, the UGC and the State Governments have undertaken programmes for the production of books in different subjects. In a recent exhibition held by the UGC and the National Book Trust of India, more than 5000 titles in regional languages in different subjects were displayed. The UGC has taken up a project of book production by persuading teachers to write books in English or regional languages. Over 200 titles have already been approved. A popular medium like Hindi is confronted with the problem of multiplication of new textbooks prescribed by different universities thus leading to duplication and wastage of resources. The use of the regional language at the postgraduate level is likely to dilute standards because books of high standard are not available in regional languages and the books in English cannot be comprehended by the candidates. Moreover, there is no competition from authors outside the region, with the result that inferior books which are available in the regional language cannot be replaced on account of vested interests. As the graduates who are the products of inferior education will be absorbed as teachers the

damage done to the generation of learners can easily be imagined

Another cause of the crisis in the Indian universities is the examination system. As the final examination is important for purposes of grant of degrees, the use of unfair means at examinations is increasing and there have been instances of mass copying at many examination centres, the invigilators are mortally afraid of catching the culprits on account of the risk of physical injury. The Principal of Rajindra College, Chapra (Bihar) was killed by some miscreants because he prevented students from copying*. The evil of mass copying is prevalent in Bihar, Orissa, U P and M P. A number of students' demonstrations have been held for promoting failed candidates. The Controller of Examination at Calcutta University was *gheraoed* by a group of students in February 1971, who demanded re-checking of answer books. The students of the Law Faculty of the Punjab University went on a strike protesting against the low percentage of successful candidates which was satisfactory by any standard (71%)†. Any attempt at reforming the system of evaluation is welcome, but pressures for lowering standards should be resisted. The new system of dividing the marks equally between the four components—class-work, periodic tests, assignments (projects or field work) and final written examination—would take the sting out of the present evaluation system.

The crisis in the university administration is accentuated by the conditions prevailing in affiliated colleges. In India, enrolment in higher education to the tune of 88 per cent is done by affiliated colleges, while only 12 per cent of the students join university departments or university institutions. The conditions in affiliated colleges are quite unsatisfactory. There is lack of accommodation in class rooms, libraries are over crowded, the food in hostels is very poor and the general atmosphere of the college is not conducive to any serious study. These factors increase the frustration and alienation of a large part of the student population. Moreover, the lecturers possess the minimum qualifications on account of the low salaries and the unsatisfactory conditions of service.

* *Times of India*, dated 27th April 1971

† *Times of India* dated 15th November 1970

It may be mentioned that about 70 per cent of the total number of lecturers are employed in the grade of Rs 300-600. Such a scale cannot attract good teachers. Moreover, there is hardly any dialogue between the teachers in the university and the teachers in affiliated colleges. The university does not own the responsibility of upgrading the teaching in the colleges. The mushroom growth of affiliated colleges in recent years could be prevented by the university through imposition of strict conditions with regard to suitable accommodation, enrolment and endowment. The colleges which have no regular sources of recurring income should not be granted permanent affiliation.

New priorities

The increase in the costs of building, furniture and equipment has given rise to the crisis of new priorities. Which things should come first—class-rooms, hostels, libraries or equipment? The resources of universities and colleges being limited, they must lay down firm priorities between the claims of undergraduate and postgraduate instruction, between liberal and professional studies. Their progress will depend on the right selection of priorities and their implementation. It may be noted that the two crises of numbers and costs will mean a higher rate of expenditure on university education. As there is hardly any scope for increase in fee-income, the major portion of the deficit will have to be met from public funds. As the universities and colleges become more and more financially dependent on State and Central Governments, the demand for surveillance will increase and this will indirectly mean a limitation of their autonomy.

necessary to refer certain problems to a particular university for investigation and to pool resources of different departments for team research. The University Grants Commission does play an important role in bringing about the much needed cooperation and collaboration among Indian universities particularly in determining the fields of their specialisation and advanced research.

The problem that confronts the universities in connection with research programmes is a complicated one. Most of the basic research is done at the universities, while applied research is done in national laboratories. The national laboratories have better equipment and funds for research—a budget of 150 crores a year—as compared to the limited resources of the universities. The pooling together of the facilities of research of all institutions specially in projects involving team work would indeed be valuable for national development. It may also be emphasised that a new orientation and direction needs to be given to research projects so that they lead to productive results in relation to our needs and within the broad framework of the national science policy. Professor Blackett pointed out the importance of applied research for a developing country like India. This implies close collaboration between research in universities and institutes of technology, national laboratories, defence science laboratories, Atomic Energy Commission and such other organisations. In view of the limited resources it is necessary to avoid duplication of research work and to carry out programmes of applied research which may yield quick results. The National Committee on Science and Technology may be in a position to demarcate broad fields of research between the universities and other institutions.

The problems of Indian universities are complex. There is a constant tug of war between the claims of quantitative expansion and qualitative improvement. Besides this there are the political pressures and pulls for admissions and appointments. On the other hand the students have become restless and their agitational approach has disturbed the quiet and the peace of the campus. Some of these problems have been highlighted by the Education Commission (1964-66) and the remedies have been suggested in its report. What is now needed is not any seminar or conference to

identify the problems but the ability, determination and courage to follow remedies at the highest level Educationists must now bestir themselves and see that the universities and colleges become beacons of light and the preservers of the democratic way of life If the system of higher education is not suitably and urgently modified to serve national goals and social objectives, the country cannot make any substantial advance

2. University Autonomy

DR G.S MANSUKHLANI

B*Y its very nature, a university cannot discharge its functions and responsibilities without a certain measure of freedom. Its autonomy is on the same footing as the independence of the judiciary and the freedom of the press, which are essential for the development of a democracy. The former ensures the maintenance of law and order and the latter protects the freedom of expression. The universities provide intellectual independence and moral leadership. In order to fulfil its functions of teaching and research, of providing trained manpower in different walks of life and of educating and improving the lot of the community, the university must have certain inherent powers and privileges. In this context, it is necessary to recall the words of Herbert Fisher, a former Minister of Education of Great Britain, who said "No one appreciates more fully than myself the vital importance of preserving the liberty and autonomy of the universities. The State is, in my opinion, not competent to direct the work of education and disinterested research which is carried on by universities, and the responsibility for its conduct must rest solely with their*

governing bodies and teachers. This is a principle which has always been observed in the distribution of the funds which Parliament has voted for subsidising university work, and so long as I have any hand in shaping the national system of education, I intend to observe this principle*.

From the historical point of view, it may be said that the establishment of three universities at Bombay, Calcutta, and Madras in 1857 did not give rise to any concept of university autonomy. However, with the proliferation of universities, the Government thought of tightening its control over higher education. Under the Indian Universities Act, 1904, the Government extended its control over the universities by (i) reserving to itself the final authority in the affiliation and disaffiliation of colleges (Sections 21, 22 and 24), (ii) giving itself the power to define the territorial limits of the jurisdiction of universities which it did not possess under any of the earlier Acts (Section 27), (iii) requiring its sanction for giving effect to regulations passed by the senate (Section 25), and (iv) making the election of Ordinary Fellows subject to the approval of the Chancellor (Section 3). It was because of the extension of Government's powers in the manner mentioned above that the Calcutta University Commission remarked that, under the terms of the Act, the Indian universities were "among the most completely governmental universities in the world," adding that such a system was likely to weaken the sense of responsibility of their governing bodies. The Commission, at the same time, qualified its statement by indicating that it was correct "in theory, though not in practice". The Radhakrishnan Commission (1948) pleaded for more academic freedom. It remarked "a great many of the present evils arise from the fact that most of our universities have no real autonomy whatever, and have proved incapable of resisting pressure from outside. Universities should be sensitive to enlightened public opinion, they should never let themselves be bullied or bribed into actions that they know to be educationally unsound or worse still, motivated by nepotism, faction and corruption. The right public policy is to give a university the best possible constitution, secure among other things of the inclusion of wisely chosen external members

on its governing body and then to leave it free from interference' *

The Kothari Commission (1966) wanted conventions to be established for preservation of university autonomy. For this purpose, a consultative machinery has yet to be devised for sorting out such conventions ✓ (5)

The four freedoms

Academic freedom is the very life-breath of the university. Autonomy includes the right of the university to determine who shall teach what and to whom. The universities are self-governing institutions and enjoy four freedoms. Firstly, the selection of students who are suitable and will profit by higher education and consequently the rejection of those who by aptitude or inferiority of talent are unworthy of entering its portals is the primary function of a university. The university must resist pressures for admissions which are likely to lower down standards. For instance, not every one who passes the Higher Secondary examination is competent to enter the university. Some universities have P U C courses or Junior Colleges (as in Kerala State) to sort out students who will go for higher education, while others prescribe a certain percentage of marks as entry qualification.

Secondly, the university must have the freedom of appointing its own academic staff. Moreover, the appointment should not be subject to the supervision or control of any other authority like the Public Service Commission or the State Education Department. In Patna University, teachers are appointed by the State Public Service Commission and in other universities of Bihar, teachers are selected by the University Public Service Commission. The success of a university depends on the right selection of teachers who ought to be men of scholarship and amenable to its discipline. To debar the university from appointing its own staff is a serious blow to university autonomy.

Thirdly, the university should be free to determine the content of higher education and the standards of attainment. This does not

mean that the courses need be stereo-typed or carbon-copies of syllabi in neighbouring institutions. While certain basic courses are necessary in humanities and sciences, the university should be free to make experiments in higher education and provide new types of training and courses to meet the demands of society or expansion of knowledge. New subjects like Biophysics, Systems engineering and Space science have found a place in some universities.

Moreover, the university has the right to allocate recurrent income among various categories of expenditure. Once the block grants are settled, the allocation of funds according to priorities and needs of different departments should be left to the university. Of course, there are certain earmarked grants which the government or the UGC or the sponsoring authority want to be utilised for specific purposes. The university may have to forego specific or earmarked grants, if it thinks that they interfere with its academic goals or autonomy.

Fourthly, the university must have the right to determine its size and rate of growth. Undoubtedly, with the explosion of knowledge and population, the pressures on the university are bound to increase, but the university must have time and opportunity to plan and organise enrolment in new courses. In a democracy, where the right to higher education is taken for granted, the university must resist the tendency to sacrifice quality for quantity.

Besides this, the university has to determine the balance between teaching, research and advanced study. The selection of research-projects and the provision of funds and the freedom of publication are important functions of the university. No other authority shall tell the university what courses to teach or which projects to select or omit.

These basic freedoms are vital to the discharge of the duties and responsibilities of the university not only to its students and alumni but also to the community. Academic autonomy is meant neither for preserving privilege nor for denying accountability. In substance, it ensures that 'initiative in academic matters remains

with the academics " Whatever they offer has to be relevant to society's needs in the present and will remain so in the future

The freedom of the teacher

The academic community consists of teachers and students. We know that the autonomy of the teacher is a precondition of his successful functioning. Firstly he has the right to say what he will teach and how he will teach it. University autonomy means * the association of the teachers in admissions, framing of curriculum and in examination. * Moreover, as a member of society, the teacher has the additional function of criticising it and facilitating the process of social transformation. Undoubtedly, he has the unrestricted right to express his opinion. If he holds a permanent appointment, the university can do nothing to him for expression of an unfavourable opinion against the university, but if his appointment is temporary, he runs the risk of the termination of his service. But the teacher has no right to propagate partisan views or opinions of political parties in the class room.

Secondly, the teacher has no right to express ideas which have not been tested scientifically or which are obviously against commonsense. He cannot invoke the protection of the autonomy-umbrella for things which are wrong or indefensible.

The rights of students

What about the autonomy of students? Do they also share the basic freedom necessary for their getting the utmost out of their stay in the institutes of higher learning? Though we have no charter of students' freedoms, we may spell out certain rights of the average student.

Firstly, the student shall have the unquestionable right of selecting his course of study, there may be student counselling by the faculty, but this does not mean that the student shall be spoon fed or told to take a particular course or quit. This is necessary because the student may have a certain profession or calling in view. He is the architect of his own future.

Secondly, the student shall have the right of completing his education and for that purpose, some secured financial assistance from the university or State if his parents cannot afford his expenses for one reason or another. Unfortunately, scholarships and freeships are so limited in this country (generally equal to 10 per cent of the income of fee paying students) that many a time a talented student may have to discontinue his studies for want of support.

Thirdly, the student shall have a limited right to participate in the academic bodies of the university. He ought to have a say in the rules and regulations. He wants the relevance of education, he wants to share the excitement of "stirring his own porridge". The recent student unrest and violence show that students have serious problems which must be faced. Some channels of dialogue have already been opened up by the establishment of Joint Staff Students Councils and Students Advisory Committees. Yet something more than consultation is needed. Are the students expected on grounds of immaturity, to engage themselves in talking and scheming without the power to implement their policies?

The UGC and the Vice Chancellors' Conference accepted the principle of student participation. The Kerala University Act has recently provided three seats for student representatives on the Senate. Student participation has already been implemented for running of hostels, libraries and extra curricular activities. Student involvement in decision making bodies has been accepted in principle, but details have been left to the universities.

Threats to autonomy

What are the threats and challenges to university autonomy in India? The threats of course come from both inside and outside the university. The internal threat arises from the teacher-politician who monopolises power and gets involved in administration. It comes from the faculty itself because it is not alive to its responsibility. Dr R. K. Singh, Vice Chancellor of Himachal Pradesh University, writes in this connection "Here autonomy, the right to non interference, has been used as a shield of the

university caucus, for its manipulating anti educational activities. It has afforded a protection to the group to vitiate the university atmosphere in which the caucus can flourish. Technically, the autonomy of the university is preserved, but the objectives it is intended to achieve, have been completely defeated. The vast majority of the teachers have little or no voice in the determination or shaping of the educational enterprises of the university. The academic independence, the right to each teacher to contribute his best to the success of his enterprise has been denied. In this denial of academic independence lies the denial of the autonomy of a university, at least not by the Government or the community, but by the university authorities themselves. *The university has lost its case for autonomy against the community*"*.

In many universities, the faculty members are taken for granted. In some universities, teachers are mortally afraid of expressing any opinion which may annoy the Vice Chancellor or the Head of the Department. The erosion of the autonomy of the department has serious consequences because the teachers cease to take interest in the academic programmes with which they are connected. Eric Ashby warns of the dangers of minimising the contribution of faculty members to development of the department. "Until universities legislate for the democratic conduct of departments, the danger remains that a profession whose members used to be regarded as partners in a society will slip into the assumption that its junior members, at any rate, are employees in corporation"[†].

The subservience of university teachers to administrators and politicians is a situation of great anxiety and alarm. Seminars, conferences and academic functions are sometimes inaugurated or addressed by persons who may not have any special competence in the issues under consideration. The functioning of some universities is the very negation of university autonomy. Such universities are run like Government departments. The Registrar is a member of the P C S or I A S. The administrators

* R. K. Singh *Our Universities and Vice Chancellors*, p. 47

† Eric Ashby *Universities Under Siege*, p. 16

treat the teachers with contempt because of the subordination of the faculty to the administrative wing of the university. Even admissions and examinations are conducted by the administrators, the faculty members are merry onlookers of the devaluation of their functions and responsibilities. Prof B R Shenoy writes in this connection "Faculty members have to put up with petty humiliations as if they were subordinates. Administrators may reprimand academicians with impunity"*. At a time, when administrators and politicians rule the roost, it is necessary to adopt a charter of academic liberties for the faculty.

Much of the interference in the university administration is built into the legislative measure through a system of checks and balances. The Vice-Chancellor's appointment is generally left to the State Government which means that politicians will have the right to nominate the Head of the university and in many cases, political considerations come into play in making the appointment. Moreover, the nomination of certain members on the Senate or Syndicate by the Chancellor or Vice-Chancellor may give ample scope for intrigue by politicians to wriggle into seats of academic power.

Political pressures

Recently, it was reported that interference by politicians in the affairs of the Jabalpur Krishi Viswavidyalaya hampered the development of its research programmes. The major interest of the political members of the Board of Management has been to provide jobs to their proteges. Jobs created in Agra University to accommodate nominees of political groups were criticised in the press, on grounds of favouritism and nepotism†. A flagrant example of abuse of power was the setting up of a university in Madhya Pradesh by the then Chief Minister (Shri S N Singh) in his constituency (Rewa) through an Ordinance and naming the university after his father.

The cases of interference by State Governments in the

* *Mervia* Vol VII No 3 (19) p 353

† *Hindustan Times* dated 11th September 1970

‡ *Times of India* dated 6th August 1971

functioning of universities are too numerous for citation. In most cases the recognition of colleges is in the hands of the State Government and in some cases the State sets at naught the advice tendered by the university. There are cases where the Government of Bombay (now the State of Maharashtra) acted against the wishes of Bombay University in continuing the affiliation of Sophia College and in granting permanent affiliation to Khalsa College and Siddharath College, Bombay*.

In 1966, the differences between the Chief Minister of Andhra Pradesh and the Vice-Chancellor of the Osmania University led to an amendment of the Osmania University Act. Under the Second Osmania University Amendment Act, 1966, the State Government was empowered to issue directions/instructions to State universities and also to remove a Vice-Chancellor. The Chief Minister ordered the termination of the services of the then Vice-Chancellor of Osmania University, which was ultimately scrapped by the Supreme Court on 6th December, 1966. A State which does not see eye to eye with a university within its region can easily reduce it to a state of dependence and even starvation by withholding grants and undermining the morale of the teachers.

Recently a case of conflict arose between the Government of U.P. and the Vice-Chancellor of Kanpur University. The Vice-Chancellor ordered re-examination of about 4,000 students found guilty of mass copying at certain examination centres and barred invigilators for assignment for three years. The Chancellor—the Governor of U.P.—cancelled the re-examination at the eleventh hour with the result that the Vice-Chancellor had no other option but to resign his post. Instead of supporting the Vice-Chancellor in maintaining integrity of examinations, the Chancellor, for reasons best known to him, sided with the students. A similar case regarding cancellation of examination held in May-June 1971 occurred in Utkal University. The State Government told the University Syndicate that its decision to scrap the examination of about 1000 candidates would have to be examined by legal experts†.

* S.R. Dongerkery *Memories of Two Universities* p. 98

† *Times of India* dated 29th August 1971

Financial control

The usual reasons for the erosion of university autonomy, at the hands of the powers that be, are the need for exercising financial vigilance, the situation of growing student indiscipline and the activities of teacher-politicians who vitiate the academic atmosphere of the university. Public accountability is a good thing and it is but proper that the Government must see that public funds are properly utilised. An eminent educationist said in this connection "If truth and the advancement of learning are the stars by which the universities set their courses, a sense of public duty must be their helm'sman". Mrs. Indira Gandhi recently told the CSIR that autonomy should go along with accountability. The Public Accounts Committee of the Parliament scrutinises the accounts of the UGC and the Central universities to see that the grants are properly utilised. This is fair enough to prevent the misuse of public funds. But there is no reason for constant meddling and holding up grants or sanctions for projects by the bureaucracy. The university is vulnerable to blackmail by politicians as it depends on the government for funds. Perhaps, the appointment of a Finance Officer in the university borrowed from the Audit & Accounts Services would take care of the internal audit. If necessary, the UGC could be persuaded to exercise a check on the financial affairs of universities in specific cases.

The control of the Government on finances is likely to influence the universities indirectly. Take the case of Lucknow University. Under the Lucknow University Act, no ordinance shall be made by the Executive Council affecting the income or expenditure unless a draft of the ordinance has been submitted to the State Government and no objection taken by it. Recently, the U.P. Government suggested to the University of Lucknow, the specific qualifications for the appointment of university teachers which primarily is the duty of the university authorities. The Vice Chancellor of Kanpur University recently remarked in this connection "The autonomy of universities was in danger because of political pressure. Political pressure was being exercised in matters relating to affiliating colleges, prescribing courses and even in examinations".*

* *Times of India*, dated 29th August 1971

Professional organisations like the Bar Council, the Indian Medical Council and the Institute of Engineers can also impinge on university autonomy by requiring the university to tailor its courses to suit the requirements of their organisations. On the other hand, such professional bodies may also help the university in maintaining high standards. The Indian Medical Council de-recognised the M B B S degree of Patna University temporarily as candidates were given grace marks to pass the final examination in 1969. Some channel of communication between the universities and the professional bodies has to be devised to ensure healthy co operation and meeting the needs of highly qualified personnel.

Embarrassing, insidious and demoralising is the 'grizzly embrace' by firms, joint stock companies and corporations which pump in a lot of money for research projects of the university. The business community would like to have a hold in university affairs. Recently, in the university of Warwick (U K) a protest was made against the domination of commercial magnates*. It would be in the interest of the university to examine the source, the motivation and the purpose of gifts, donations and research grants before acceptance to be sure that no non academic strings are attached to them.

Equally objectionable is the interference of politicians in the matter of appointment of university teachers. Appointment should be in academic hands and in conformity with the regulations of the university. To recruit a large number of staff from among a group with a particular political bias or from a particular community will turn the university into a hot bed of intrigue and ill will.

The position with regard to 'deemed universities' numbering ten which are recognised as degree granting institutions by the Central Government under Section 3 of the UGC Act is somewhat different. These institutions are registered under the Societies Registration Act of 1860 under a Memorandum and Articles of Association. The Central Government has the overall power of

* New Society *The Business University* 19 Feb 1970

holding an inspection of its teaching work, its laboratories and its examinations and also ordering an enquiry in respect of any matter connected with it. Some deemed universities have provision for a Visitor and also a Chancellor. The Constitution of the Tata Institute of Social Sciences, Bombay, provides for a Governing Board, Holding Trustees, Academic Council and Finance Committee. The Birla Institute of Technology and Science, Pilani, has a General Body, a Board of Governors and a Senate. Gurukul Kangri Vishwavidyalaya, Haridwar, has provision for a Senate, a Syndicate and an Academic Council. Kashi Vidyapeeth, Varanasi, has provision in its constitution for a Governing Body, an Executive Council and an Academic Council. As all these are small institutions, no problems of autonomy have yet arisen. But as these institutions grow in size and their budgets increase, they will make greater demands on public funds. Then perhaps, a need for a close surveillance of expenditure will arise.

Guardianship of the U G C.

It is in this context that the need and utility of the UGC can be amply vindicated. By laying down rules regarding staffing patterns, salary scales, norms for libraries, laboratories and hostels, the UGC prevents inroads into university autonomy. Moreover, by enabling the universities to lay down priorities, the UGC secures the best utilisation of the funds placed at the disposal of the universities for development projects during a Plan period. In a way, the UGC acts as a guardian of university autonomy, seeing to it that the interference of the State Government is reduced to the bare minimum. Through the scheme of matching grants and by involving the State Government in projects of development, the UGC secures the active co-operation of the Government for the furtherance of higher education.

Under the UGC Act as amended, the Commission has the power under Sections 12 and 13 to look into university affairs for the determination and maintenance of standards of teaching, examination and research. The Sapru Committee Report (1964) detailed the opinion of the Attorney General in respect of the powers of the UGC. Under entry 66 of the Indian Constitution, the Central Government and the UGC have powers to

regulate minimum standards of fitness for admission to universities or to technical and professional institutions, including medical, engineering and agricultural institutions. Similarly, the UGC has powers to direct inspection of colleges and other institutions in order to ensure that proper standards are maintained. Besides this, the UGC has the right to fix the qualifications as also the method of selection of teaching staff in order to ensure maintenance of standards. But in practice the Commission has upheld university autonomy and resisted the temptation to issue directives. It has followed the best traditions of the British UGC and avoided interference in university matters. Through its Visiting Committees it has maintained a dialogue with the universities and not only given financial assistance but also expert academic advice whenever sought.

The Education Commission (1964-66) desired that conventions be established to reconcile autonomy with the claims of society. The Commission wrote in its report: "While universities must have this autonomy, it should be interpreted in the large context of their obligation and responsibility to the nation and to mankind as a whole. It is apparent that the conduct of university affairs cannot be left solely to the academics, their relationship to social needs requires the admission of non academic persons within the machinery of their government. The universities have thus to share their decisions with lay agencies or authorities outside the system, just as they have to share them with one another or with organisations within the university system itself such as the University Grants Commission and the Inter-University Board. It is particularly in such problems that issues of university autonomy have to be handled with great skill and imagination and it becomes necessary to develop attitudes and conventions which will do justice to university autonomy as well as to the valid claims of society. For this purpose, a suitable machinery for consultations should be developed between the universities, the representatives of university interests such as the UGC and IUB and the representatives of Government departments both at the Centre and in the States. In the working of this consultative machinery, procedures and conventions should be developed for reaching decisions regarding numbers to be trained, courses of study and problems

of applied research. The most important element in these conventions should be a common appreciation that every task to be undertaken by a university must be carried out at the standard necessary and that the capacity of the universities to teach and to do research is not diminished as a result of the decisions taken. If for instance, in preparing high level technical and medical personnel the universities are asked to increase their enrolments suddenly without providing adequate facilities it is not merely the universities that suffer but also the quality of training which is essential for such personnel '*.

Autonomy and the Judiciary

Autonomy should not be interpreted as an omnibus licence to the university authorities to do what they like. They are governed by the enactments and statutes which brought them into being and the Indian Constitution. In certain cases, High Courts have been called upon to determine whether the powers exercised by a university under the Act or under delegated rule making provisions are within the competence of the university authorities or not. The courts have exercised such jurisdiction to interpret the powers of university bodies.

In 1962, when Gujarat University made an attempt to make Gujarati and Hindi the only two media of university education to the exclusion of English and other languages, the Gujarat High Court scotched the move and held the provision as unconstitutional. The Gujarat State and the University appealed against the judgement to the Supreme Court. The Supreme Court upheld the decision of the Gujarat High Court and further upheld the right of the Central Government to prevent States, in their enthusiasm to promote Hindi or the regional languages, from enacting such legislation which would bring down standards in higher education. The Supreme Court in its judgement on the provisions of the Kerala University Act, 1969, held firstly that though the State has the power to regulate the standards of education it has no right to regulate the management of colleges run by minorities. Secondly, any conditions of service prescribed for the teachers should not impair the right of educational agencies to manage

their institutions. Lastly, the State, under no circumstances can take over the colleges of minority communities*. This position has been modified by the latest 25th Amendment.

The latest judgement of the Supreme Court in the case of D A V College Trust Vs Guru Nanak University given on 5th May, 1971, declares that "no university in the country would prescribe a particular language as the 'exclusive' medium of instruction and examination of candidates studying in the universities to the prejudice of the fundamental rights enshrined in Articles 25 to 30 of the Indian Constitution"† The Guru Nanak University could not, therefore, 'compel affiliated colleges established and administered by linguistic and religious minorities like the Arya Samaj who wish to preserve their language (Hindi), script or culture, to teach in Punjabi or take examination in that language. The Supreme Court also struck down Statute 2(1) (A) of the Guru Nanak University which provides that every affiliated college should have a Governing Body of not more than 20 members to be approved by the university of which three members were to be as specified in the Statute. The Court held that this was an interference with the D A V Trust Constitution framed under the Societies Registration Act, which provided for 25 members belonging to the Arya Samaj. This Statute violated the fundamental right of the trust to manage its institution in its own way. The Court further held that Statute 17 which provided that all appointments of staff and subsequent changes in them would have to be approved by the Vice Chancellor was an infringement of the fundamental right of the Trust to administer its own college as minority institution and thus bad in law.

The Supreme Court held that academic study of Guru Nanak's life and teaching could not be considered as making provision for religious instruction and did not "amount" to impermissible religious instruction. The Court also ruled that the compulsory affiliation of colleges situated within the four notified districts to Guru Nanak University did not affect 'freedom of association as provided under article 19(1) (c) of the Constitution.

There is no gain saying the fact that the powers of a university to regulate the medium of instruction or to control educational

* Kerala Law Times 1970 KLT 630

† Times of India dated 6th May 1971

institutions of minority groups is subject to the fundamental rights guaranteed under the Constitution. The universities must be on guard against political and linguistic pressures and do nothing against the provisions of the Constitution, otherwise they will get the reprimand of the judiciary and spoil their public image.

The Education Commission also drew the attention of the universities to two basic points. Firstly, the price of autonomy is vigilance by all parties concerned. The real custodian of autonomy is public opinion in which the UGC, the IUB and the intelligentsia, who are themselves mostly the alumni of the universities, have an important role to play. Secondly, the universities cannot expect autonomy to descend as "a gift from above". The universities derive their right to autonomy from their dedication to the pursuit and service of truth. Moreover, as they discharge their intellectual and public obligations, effectively and with integrity, they will earn the esteem of society and government and the chances of their being confronted with illegitimate claims and pressures from outside will be diminished."

Finally, the universities must realise that they cannot live or function apart from their societies. Autonomy does not mean isolation from the main stream of life or insulation against the winds of change or currents of progress. The universities have a responsibility to the needs of the changing society and must not only supply training in traditional professions of law, medicine, teaching and other disciplines and leadership in public service, but also break new ground through reform and research. Their freedom in the matters of administration and academic affairs must not make them oblivious of the fact that their funds come largely from the contributions of the tax payers and as such, they must justify every rupee spent on their maintenance and development. This does not mean that any of the Government representatives should sit on the decision making bodies to exercise control over finances. Academic freedom and public accountability must go together in the interests of any educational institution. Ultimately, the extent of university autonomy in any country is an index of the success of democratic processes in that region.

3. *Are Standards Falling ?*

DR. S.C. GOEL

IT is often said that standards of university education have deteriorated during the last two or three decades and that there is a wide gulf between standards obtaining in Indian universities and standards in some of the well known universities of the western world. It is also said that students of 20-30 years ago were more talented, had a higher intellectual calibre, better *standard of expression and a higher level of understanding*. Standards are also judged on the basis of quantitative and qualitative performance of students in university examinations and interviews and tests conducted by bodies like the Public Service Commissions. Another criterion which is often used to evaluate standards of university education is the absorption capacity of our graduates in various sectors of public life. Judgements are also formed on the basis of the performance of our students in foreign universities and institutions of higher learning.

The problem of investigating standards is not as simple as it appears to be. The pronouncements that are made in this regard

in common parlance are often based on the performance of individual students or at best of a small group of students and that too in relation to the objectives and skills that may have no correspondence with the accomplishments of a university graduate. When it is stated that standards have gone down noticeably during the last 20 or 30 years, do we make a proper comparison of the top 20 per cent of today with the top 20 per cent of yesterday or are we merely thinking of the widening base of the mediocre and indifferent students, which is inevitable in an economic and sociological set up that enables education to spread to the lower echelons of society. Today we have in our universities and colleges a significant proportion of students who may be described as the first generation of learners. Conditions of study and learning in their homes are far from congenial and there is a complete absence of the educational environment in their lives. The person who decries standards does so because he is confronted more and more by this group of learners. The middle 60 per cent and the bottom 20 per cent is becoming the all pervasive influence in our society and we often lose sight of the top 20 per cent, who according to many universities are as good as ever, if not better.

Two important considerations have to be borne in mind in any attempt to evaluate standards scientifically. Firstly, we must define the constituents of education which determine standards with reference to the levels of education and the varied aspects of the problem of standards such as admission requirements, contents of courses, structure of education, methods of teaching and assessment, etc. Secondly, we must recognise that the concept of standard is a dynamic and evolving concept and our approach to the problem of measuring standards should neither be rigid nor static. In other words, the unit of measurement is not constant and the yardstick by which we measure standards is itself changing.

The term 'dynamic standards' needs to be elaborated here. The expectations against which we measure achievements are constantly going up as a direct consequence of the explosion in knowledge taking place everywhere. Knowledge is advancing rapidly not only in the field of science and technology but also

in the humanities and social sciences, which are often referred to as 'social engineering' or 'social dynamics'. In certain areas the growth of knowledge has been so spectacular that it would perhaps be highly appropriate if the validity of university degrees or diplomas is subject to periodic renewal.

The rapid growth of knowledge necessarily implies that the gulf between the developed and underdeveloped countries of the world must go on widening day by day, unless we can maintain standards at a level higher than those in the developed regions of the world. It is in this context that a comparison of standards obtaining in different parts of the world becomes relevant and material. In fact, an underdeveloped society expects more from a student than a developed society and within a society we expect more from a student today than ever before. For example, a student of economics in 1920 never heard of the economics of imperfect competition, modern theories of trade cycles, econometrics and so on. A student of political science never came to grips with the problem of political behaviour and governmental machinery in action. Sociology was an infant discipline at that time and psychology was anything but experimental. Is it then valid to compare standards over a period of time or between one country and another?

It is also a fact that one has to struggle ceaselessly in order to gain eminence in the world of today. Gone are the days when someone who published half a dozen papers in a journal of international repute or had a doctoral degree could go to the top of the educational ladder. Today, one will not be surprised to find teachers with a doctoral degree working in an intermediate college or even a higher secondary school. Is it merely a consequence of the devaluation of our degrees or is it because the competition is keener today than before in every walk of life?

A committee appointed by the University Grants Commission to make an objective and systematic assessment of standards came to the following conclusion: 'The picture that emerges from the above account is one of lights and shades. It cannot be said that there has been an overall deterioration in standards. Conclusions that can be drawn from the above account cannot

also be applied to every class of student and to every stage of instruction. While our universities have many achievements of which they can justly be proud, there is also much cause for dissatisfaction”

More recently, the Education Commission (1964-66) devoted sufficient attention to the problem of evaluating standards and observed as under “In our opinion, the basic issue in educational reconstruction is not to compare the standards of today with those of the past and to determine whether they are rising or falling. On the other hand, we should judge them on the basis of three inter related criteria—adequacy, dynamism, and international comparability. Standards must be

- adequate in relation to the tasks for which they are intended,
- dynamic and keep on rising with the demands for the higher levels of knowledge, skills or character which a modern society makes, and
- internationally comparable, at least in those key sectors where such comparison is important

Judged on the basis of these criteria, the existing situation appears to be far from satisfactory. Our universities do a good deal of work which really belongs to the secondary school and the latter in its turn does a good deal of work of the primary school. Even where the standards have risen, the rise has not been adequate and better results would have been possible if the existing facilities had been intensively utilised. The main purpose of the first degree should be to bring students to the frontiers of knowledge and to the threshold of the world of research, and that of the second degree to provide a high level of specialisation or to initiate the student into research itself. Our first and second degrees in arts, commerce and science do not generally come up to these standards. Moreover, our degrees should be internationally comparable in the sense that those given by our best centres should be as good as those of similar institutions in any

part of the world But by and large, it is our second degree in arts, commerce and science that introduces the student to the world of research and is comparable to the first degree in the educationally advanced countries "

It seems, however, that international comparisons of standards would continue to be far from valid so long as the duration of courses leading to the first degree in India remains 14 years as compared to 15 years in the U S S R and 16 years in the U K and U S A What is possible in the present system is an age to age comparison and here also we may have to eliminate the effect of time spent by an Indian student in acquiring working efficiency in a foreign language, which is used not only as a window to knowledge but in many cases as a medium of instruction We have also to take note of the several inadequacies in our educational system such as ill equipped libraries and laboratories over crowded class rooms poor teacher pupil ratio and the many defects of the system of higher education in the country, such as emphasis on lectures, memory dominated tests and examinations, reliance on cheap bazar notes etc One may ask as the poet does

"Where is the wisdom we have lost in knowledge?
Where is the knowledge we have lost in information?
The cycles of Heaven in Twenty Centuries
Bring us farther from God and nearer to the dust "

It seems almost certain that our standards of expression have gone down in English as well as in the regional languages This applies to verbal as well as written expression and is perhaps explained by the fact that with the expansion of enrolment in the universities and colleges, contacts between the teachers and students are not as intimate as they used to be A perusal of the reports of university examiners in different subjects shows the imperative need of having more tutorials and seminars by cutting down lectures, to give the students adequate practice and time for independent reading writing and expression This would imply an improvement of the teacher pupil ratio to make personal contact possible and to stimulate the student's critical faculty and independent judgement But more than this it would mean

that there should be good teachers who can encourage students to get away from the rut of examination. The summum bonum of good teaching lies not in giving a certain number of lectures or covering the syllabus or preparing students for the final examination but to involve the student in the learning process through direct contact with the mind of the teacher.

A consideration of the utmost importance in the maintenance and improvement of standards of higher education is that of the conservation of our limited resources. We cannot and should not fritter away our scarce resources on the establishment of new universities and colleges. The multiplication of institutions of higher education without consolidating and strengthening the existing ones can be highly detrimental to the pursuit of excellence. If there could be a five-year moratorium on the establishment of new institutions and we decide not to increase the intake of existing institutions beyond the optimum size, it would perhaps be possible to build up a modicum of physical and academic facilities. Expansion of educational facilities is in itself a desideratum but if we are unable to create commensurate facilities, a process of declining standards is likely to set in. It is in order to ward off these dangers that we will have to resist political pressures and parochial sentiments, which often manifest themselves in creating replicas of the existing universities and colleges.

It is important to ensure that even within the existing framework, our resources are so deployed that education as an investment in human beings yields increasing returns. It is in this context that the concept of the centres of advanced study and the loosely talked about 'major universities' assumes great significance. For obvious reasons, the available resources cannot be distributed evenly or proportionately, the principle of equity demands that those departments or clusters of departments which have grown to a certain international stature should be enabled to achieve that critical size where their impact would become meaningful and effective. As educational entrepreneurs, the centre of our interest should shift from the 'average' firm to the 'optimum' firm. It goes without saying that in selecting particular departments for intensive development we will have to exercise the utmost care and deliberation and even after the

initial selection is made, there can be no finality about this and we will have to bring a dynamic approach to bear upon the developing situation

The question of a suitable admission policy is central in any discussion on educational reform and maintenance of high standards. Unfortunately, our universities have, by and large, followed an 'open door' policy with the result that we find in the universities a large number of students who have neither the aptitude nor the ability to benefit from higher education. It is, therefore, not surprising if the failure rate is as high as 50-60 per cent in the undergraduate examinations. There are also a large number of cases of premature withdrawals of students from the colleges or of shifting from one course to another, owing to their inability to cope with studies. This results in unnecessary wastage of time, money and effort, which a poor country like India can ill-afford. The overall wastage in higher education in the United Kingdom is only 14 per cent. In India, wastage, stagnation and failure rates are almost alarming. In a study conducted by a former rector of the Bombay University, it was found that only about 25 per cent of the students were able to complete the degree course within the period prescribed for it. In another study made by a faculty member of the M S University of Baroda, it was estimated that roughly 33 per cent of the students leave the university before completing their courses.

It is against this background that we have to consider the problem of access to higher education. While it is true that there is a social upsurge for higher education and education plays an important role in equalising opportunities and in the socialisation process, this should not lead us into accepting the right to education as a fundamental right. We do not intend to deny educational opportunities to any one except those who fail to demonstrate their ability and aptitude for courses at a higher level. It is also our responsibility to ensure that there are alternative sources or channels or training centres for those who fail to secure admission to a university or college. We will have to increase the opportunities for vocational training as an alternative to the academic courses in the universities. Within the university system, we may perhaps provide for a Pass stream and

an Honours stream, the latter being available to students who are intellectually more gifted. It would also be equally necessary to introduce the correspondence method of education, supplemented by contact classes and orientation courses, to take care of a large section of the society who might have discontinued their formal education owing to pecuniary and other circumstances.

In so far as our courses of study are concerned, two comments which are often made are that we do not make a serious attempt to define the objectives of undergraduate, postgraduate and research courses and that we fail to keep abreast of the latest developments in various branches of study. One reason for our courses being out-moded is that in many universities the procedure for revising them is rigid and laborious. Another serious obstacle is the lack of competent teachers in the new areas of knowledge and techniques of teaching which the universities may like to introduce. It was to overcome these difficulties that the University Grants Commission appointed review committees in the humanities, social sciences and science subjects, to suggest model syllabi or scheme of papers. The Commission also supported efforts by the universities for the orientation of their teachers through the organisation of seminars, summer institutes, refresher courses, symposia, conferences etc. Some of these efforts have borne fruits but they touch only a fringe of the problem, for unless the universities have a built-in device to effect necessary improvements, bring about desirable changes in syllabi, organise year-round refresher courses and seminars, we cannot hope to overcome the malaise of obsolescence in studies and research.

A principle of great significance in so far as undergraduate education is concerned is the principle of flexibility which should enable students to break away from the traditional combinations of subjects and to offer new combinations, thus bringing a new approach to study and learning. This is possible only if courses are divided into smaller units, care being taken to ensure that only those course units are taught for which there is a sufficient demand. This qualifying measure seems to be necessary not because of academic considerations but in view of the limited

prospects of employment, owing to which students prefer a fair sprinkling of their optional papers. The greatest casualty in this process is the training of the specialist. What we are really producing today are general economists, political scientists, sociologists, psychologists and so on. It is high time that we reorganise our postgraduate courses in such a way that students specialise in particular areas with a sufficient degree of practical orientation. In fact, one of the papers in the specialisation group should be a two or three month training in an approved institution, connected with the field of study taken up by the student for specialisation at the postgraduate level. This cross-fertilisation of ideas between the theoreticians in the universities and practitioners in the institutions has immense possibilities for improving our tools, ideas and practices.

The next logical step towards the maintenance of standards is to bring about a proper coordination in the postgraduate courses. Postgraduate education is a highly specialised business requiring competent teachers at the highest level, books, source materials, journals and their back numbers, laboratories and equipments and it is not only wasteful but a physical impossibility to have all postgraduate departments offer all areas of specialisation. A particular department should offer specialisation in one branch and certainly no more than two branches at the postgraduate level and try to build up all its resources including teaching personnel around that area of specialisation. It should be possible for every State to coordinate postgraduate education in such a way that four or five specialisations are developed in each discipline, keeping in view the needs and requirements of the State. This seems to be the only way in which postgraduate programmes can be turned into a powerful instrument for raising the standards of education at all levels.

A word may also be said about the research activities and output of our universities. Judged by the number of doctoral degrees awarded every year and the number of papers published in research journals, our record is very impressive indeed. Some of our teachers have done outstanding work and their contributions have won world wide fame. But many teachers are indifferent to the value of research. The rules laid down by the universities

for research guidance, training in research methodology, appointment of examiners, viva voce etc leave much to be desired. It is also a fact that many teachers do not find a congenial atmosphere for research work. The Commission's scheme of junior and senior research fellowships, provision of seminar libraries and research cubicles, travel grants for visiting centres of research etc are all oriented towards the growth of research in the universities but it would need resources on a much larger scale if we have to produce a truly research climate in the universities. One of the important measures of reform called for in the field of research is the provision of either a short term pre Ph D course or an orientation programme to give the candidates a thorough grounding in the techniques of research and advanced level course-work in the area selected by the candidate for research. This should be followed by effective guidance to the candidate and not merely perfunctory supervision arrangements as happens in some of the departments which permit ten or more candidates to be enrolled under one research guide.

The conventional system of examinations has also come in for much adverse criticism in recent years. The high failure rates which university examinations produce at different levels are wholly unconscionable. A failure rate of approximately 50 per cent at the B A, B Sc, B Com examinations is in itself high but when combined with failure rates at earlier examinations, it gives a wastage of the order of 70-80 per cent. The reduction of wastage without lowering of standards is a problem which poses a serious challenge to educational thinkers. We have first of all to recognise that examination is not only a method of evaluation but an instrument of good education and proper guidance to the students. Therefore, there is an urgent need for every college and university to have a close look at its examinations for analysing and interpreting results from the viewpoint of education and guidance. Such empirical studies can lead to adoption of methods which would enable us to reduce wastage in higher education.

If we have the courage and the will to introduce some of these changes and innovations, we would have taken a concrete step towards reinforcing standards without quibbling about the purely academic issue—whether standards are falling.

4. Examination Reform

DR. G.S. MANSUKHANI

TIME and again, educationists have protested against the defects and vagaries of the examination system. How can one judge the quality of a student by a three-hour squeeze of knowledge in a script? How can one avoid the subjective bias in an essay type paper? How can one assess the intellectual level and creative ability of a student by an exercise in memory? Can an examiner dare to plough a large number of candidates who have reproduced the same answer from a common source? Can one not do a piece of work better in one's own time than in a hurry or on demand? One is reminded of the famous quip 'In examinations, he who thinks is lost!'

I have heard head-examiners telling sub-examiners to promote even weak candidates to get a decent pass percentage. The list of successful candidates finalised on the strength of grace-marks, scaling, moderation and weightage is based on expediency rather than reason. So, the vicious circle of passing on the weak baby to the next nurse goes on till the market is swamped with so many mediocre, unemployable graduates. The deterioration in standards has been so pronounced that professional bodies have been alarmed and have been compelled to take precautionary measures. Recently, the Indian Medical Council temporarily derecognised the M B B S degree of Patna University because many students were declared successful last year on the basis of the grant of grace marks. Such a fall in medical education is likely to encourage quackery and deterioration in public health. It is rather strange that the university should lower the standards of technical competence on account of student pressure.

Types of questions

The setting of a good question paper is a very difficult task. Apart from covering the contents of the subject, it should have questions to test the ability of the student in an extensive as well as in an intensive manner. Choices and options should be restricted, otherwise one cannot distinguish a good student from a bad one. Moreover, it would be better to have the scripts assessed by a Board of Examiners instead of individual examiners, as is being done by Delhi University for its postgraduate courses. It would be useful if the paper setter prepares an outline or synopsis of the answers for the guidance of the examiners for ensuring uniformity in evaluation. A recent seminar recommended the re-designing of question papers so as to avoid their being repetitive or stereo typed*.

The essay type question papers have been criticised by many educationists. The student has just to cram a few topics without understanding the subject matter. Moreover, students avoid difficult questions and attempt the easy ones. Factual questions

are often attempted by students instead of questions of application-type or problem type. The level of performance in hard questions is generally lower than that in simple questions. Very often questions lack clarity and specificity. In order to remove these defects, the following measures have to be taken

- (i) The questions should evaluate the objectives of teaching
- (ii) A large number of questions, preferably short, should be asked so as to cover the entire course
- (iii) Questions should be clearly stated so that they mean the same thing to everyone
- (iv) There should be a proper balance between factual questions and application type questions. Separate pass marks in each such set of questions should be insisted upon

The examination system must be geared to the objectives of courses. The objectives of undergraduate courses are different from those of postgraduate education. Similarly, the scope and purpose of an Honours course vary radically from those of a Pass course. Both the teacher and the examiner should clearly know the level of proficiency or intellectual attainment expected of a student in a particular subject for a specified degree. Teaching and learning should not be determined by the pattern of the examination paper or a set of expected questions.

Objective tests have been suggested as alternatives to essay-type questions, but even these suffer from an inherent weakness. The student need not go into details or understand or explain the process or rationale of a valid answer. The student may memorise major points and sub points and he may not trouble himself with the explanation or significance of various issues. So objective tests too encourage cramming and reduce largely the chance of intensive understanding of a subject or the depth-study of a topic.

It is quite likely that the question paper containing objective tests will be a long one on account of true false options and check-lists. In order to discriminate between a bright student and a slow student, some incentive ought to be given for speed. For

example, ten marks may be reserved for promptness, the one who submits the script answering all the questions first, may get ten marks, the next one may be given nine marks and so on. Thus will clearly indicate who is a relatively bright student.

Another disadvantage of objective tests is that they discourage the communicative capacity and writing talent of students. Students are not given an opportunity to express themselves adequately and to reason out things. The chord-chain of communication is pulled up abruptly.

Internal assessment

Recently some experiments have been made in some Agricultural universities and Indian Institutes of Technology to take the sting out of the examination system. Internal grading has been introduced by 22 universities for assessing by periodical tests and assignments, the achievement of students. Internal grading however has its own problems. Firstly, internal assessment requires adequate preparation and proper safeguards. It can be successful where the admissions are selective and where the teacher student ratio is satisfactory. It can not work where the classes are large (100 to 200 per section) and where there is no opportunity for personal contact between the teacher and the student. Secondly, students who are close to the teacher—we may call them 'insiders'—expect better grades while others who keep at a distance—we may call them 'outsiders'—are at a disadvantage. The teacher is expected to be impartial and objective. How can he avoid the suspicion of favouritism? How can he keep the safe social distance with his students? If he is too close, the student will take advantage of his familiarity, and if he keeps some distance, the student will complain of apathy and isolation. In order to remove the apprehension of favouritism, the essay type questions have been partly abandoned and objective tests have taken their place. The grading system is open. It is explained to the students and there is hardly any chance of over marking or under marking. Moreover, the notebooks of tests are open to verification by students. Thirdly, internal assessment reduces the scope and dimension of the examination. The student confines his studies to what the teacher

has taught in the class. He need not go in for an extensive or intensive study with the help of additional books available in the library. He would stick to his class notes because the teacher dare not set questions from portions not covered by his lectures. If the teacher sets questions on the entire course, he runs the risk of facing a strike or a walk-out. Under the external examination however, the teacher is under an obligation to cover the entire course and for this purpose he has to stick to a date-wise lecture-schedule. Under the system of internal assessment, he can proceed at his sweet will and cover what he likes. Moreover, some of the students may not appear at regular fixed tests and may insist on 'make-up' tests. Such tests are quite time-consuming and reduce the choice of questions to be set in the test.

Another disadvantage of internal assessment is that on account of these tests being held at regular intervals—weekly, fortnightly, mid semester, and semester-end—the student is continually under strain. He does not take part in co-curricular activities or sports because he is haunted by the fear of the approaching tests. The teacher is also in a dilemma. He cannot be a friend and a judge at the same time. He has to resist the pressure-tactics of 'grade-greedyies'. The student will blame the teacher who does not want to award easy grades. After all, grades mean a lot to the student. He must have the grade to win or retain a scholarship or be eligible for a job or a higher assignment. In any case the teacher has not only to be impartial but also appear to be so.

How far are the present written examinations reliable? Reliability means 'the degree of consistence between one examination and the next or between one examiner and another'* Reliability can be verified by repeating the examination in one form or another and then comparing the performance of the candidate on the two occasions. If there is a close similarity between the two markings—a high co-relation—certainly the examination is reliable. Another way of checking on reliability is the re-assessment of the written paper. If the first examiner marks the paper again—provided the original marks have been concealed—and gives practically the same marks, the test is reliable.

* W B Rust and H F P Harris *Pass or Failure*, p. 84

What about the validity of the examination? Validity is a measure of its success or failure in fulfilling its objectives. Validity can be checked by requesting several experienced examiners to assess the script in the light of the declared objectives. A function of this sort is performed by the moderator. Another way of checking on the validity is by comparing the marks on the script with the assessment of teachers made on the candidate's work over a period of time under normal conditions. This is easily done by placing internal assessment against external evaluation.

The crucial problem is how to stimulate students to an intelligent study of prescribed courses by removing the barrier and fear of examinations and at the same ensuring a scientific method of evaluation. Besides, should the evaluation be continuous and internal, or occasional and external? No satisfactory answers have been found to these questions. In the first instance, we cannot do away altogether with the system of examinations. Secondly, in this age of competition one has to have some yardstick for measurement. Swedish schools have no formal examinations now, because according to them, "it would be inconsistent with the social aim of education if an instrument of assessment is retained which places decisive weight on performance during a very short and trying period." In the United Kingdom, the written examination still continues to be popular. Even in older universities like Oxford and Cambridge, only a minor part of the students' performance is judged through tutorial assignments. At Surrey, the credit scheme is being experimented to provide a measure of proficiency in the course undertaken by the student and often examinations are held to judge the value a certain course has had for the students. In Japan, the number of university students is very large and so is the competition for places and yet the Japanese failure-rate is very low. It is taken for granted that once a student has entered a university, the fear of failure comes to an end and this acts as incentive to the better performance of the student.

Experimentation

There is an awareness of need for rationalisation and modernisation of the system prevailing in India. Universities in twelve

States have set up their own evaluation units. The Examination Reform Cell in the University Grants Commission is seized of the problem of reorientation and overhaul of the system, as an integral part of the maintenance of high standards in education. It has been felt that continuous assessment of the candidate's work through tutorials, seminars and discussions is a fairly correct index of his intellectual ability. Credits are given for performance in various tests, including objective tests, field work or projects and oral examination.

The UGC report on examination reform recommended several measures: diversification of tests in the shape of multiple choice tests, short answer tests, open book tests, viva-voce, in addition to the essay-type examination, ranking of candidates division wise rather than mark-wise, splitting of teaching work (50% lectures and 50% tutorials), maintenance of records of assessment, spacing of examinations, setting up of examination research units in universities and streamlining of tabulation work. Some universities have taken steps in this direction. Examination reform and research units were set up at the Universities of Aligarh, Baroda, Delhi and Gauhati. Baroda University has introduced the system of grade credit in the Faculty of Arts and Social Sciences. About one-third of the number of universities have introduced credit system for sessional work (20% to 30% marks) and about three-fourths of the universities have undertaken moderation of question papers. Jodhpur University is going to experiment with the open-book examination. Sambalpur University has from this year asked examiners to evaluate the scripts in the presence of Chief Examiners on the campus, so that the evaluation becomes above board. The Vice Chancellor's Conference suggested that 20% of the marks should count for periodic tests and advised revision of syllabi from time to time to include latest developments in various subjects. The University Education Commission emphasised the desperate need of overhauling the system. "we are convinced that if we are to suggest any single reform in university education, it should be that of examinations"*

The Education Commission made the following recommendations

- (i) There is a great need of internal assessment as a supplement to external examination. The marks in both tests should be shown separately in the certificate. To prevent internal over-assessment, the Commission suggested withdrawal of grant or affiliation in extreme cases.
- (ii) A programme for reorientation of university teachers for adoption of new and improved techniques of evaluation through seminars and workshops should be started. The Commission recommended 5 grades, 'A' grade being reserved for the top 20%. It suggested abolition of remuneration to examiners because evaluation is a part of teaching.
- (iii) In order to activate a movement of examination reform the Commission recommended the establishment of examination research units in the UGC and in universities. Unfortunately, the implementation of these recommendations, except for partial internal assessment, has been rather slow. A conference of student representatives held in May 1969 suggested the proper spacing of class tests, viva-voce tests, and commended the assessment by grade in preference to numerical marking. Over-emphasis on the acquisition of a degree has led to the racket of coaching classes and teaching shops. The social value of degree in the matrimonial market is responsible for over-crowding in colleges. The low standard of teaching can easily be verified by attending a degree-class in a mofussil college. The UGC Committee on Examination Reform in Central Universities (1969) recommended improvement in paper setting—which may include at least one question that does not belong to the syllabus—and reviewing of sessional marks in case of its large deviation from the marks secured in the annual examination. It may be desirable not to tie down the questions to the syllabus. The prescribed texts should serve as guidelines to the study of the subject. The Committee even suggested the eventual abolition of the set syllabus and the external examination and its replacement by a system of internal and continuous evaluation by the teachers as is done in the IITs*.

Latest trends

Judged from the fact that there is still a need of yearly or final examinations, we have to accept them as a necessary evil. The only remedy lies in improving techniques, ensuring the integrity of examinations and training qualified examiners who may judge the performance qualitatively rather than quantitatively. A suitable compromise between external evaluation and internal assessment is desirable. Like the practice in some British universities, the services of an external referee may be found valuable. Cross marking and cross moderation are useful for maintaining uniformity of standards. In U.K., multiple marking has proved superior to other methods*. Many universities have introduced the semester, trimester system, sessional records, grading system (3 to 4 divisions) in place of the award list (so many marks out of so many). To ensure that the impact of examinations on teaching is wholesome, a meaningful dialogue between external examiners and teachers who teach the subjects concerned is necessary in the process of evaluation. At a Seminar on Examination Reform held in Delhi on 8th October, 1971, Dr. C. D. Deshmukh made an extraordinary proposal to prevent leakage of question papers. He suggested a 'lottery' system for the setting of questions. Under this system, the universities would prepare a set of 1000 questions in each subject. Out of these, a group of questions could be selected by draw of lots to make the question-paper for each centre. Perhaps this suggestion could be tried, but it does not overcome the evil practice of smuggling of answers or influencing examiners for obtaining high marks. A recent seminar held in Agra recommended annual review of question-papers by a screening committee.

The tide now is generally turning towards subordinating examinations to educational objectives: testing skill in reasoning, systematic presentation of material, creativity, and integrating them with the content of education as a whole. Moreover, to encourage the democracy of merit, opportunities should be provided to candidates to improve their performance. A third class M.A.—a definite disqualification for employment as a lecturer—must be given two or more chances to improve his performance either by private study or through correspondence.

* R.H. Thouless *Map of Educational Research* p. 309

course Is it right to block a man's career for all time? Recently 'joint evaluation' by both the teacher and the student has been introduced by some experimental colleges in the U.S.A. The point is that a student may have a way of knowing both his skills and weaknesses

Educationists have realised the non-cognitive aspects of learning such as character, emotional development, and social maturity and all these elements should be taken into account while judging the total performance of a candidate. No written test can possibly measure honesty, loyalty, courage, tact, discretion, initiative or even punctuality. On the contrary, the examination system dictates the curriculum and choice of subjects, and arrests the self-development of the student and dwarfs his mental capacities. The real purpose of examination is to provide an incentive to effort, to measure attainment and to predict future success. This can be achieved by broad basing the system so as to include comprehensive evaluation of the course record, tutorial work, special assignments or field work and the final written examination.

Educationists have also pointed out that the system of public education must place itself under the supervision of universities and centres of higher education. The final school examination, now conducted by the Education Department or the State Secondary School Board, could be handled by the universities both in the interests of maintenance of standards and its utility as an entrance qualification for higher education.

Lastly, examinations will survive, though in a different form, and efforts will be made to make them valid, reliable and objective. The combination of external examination with internal assessment and the process of continuous evaluation will give an accurate measure of the real attainment of a candidate. Educationists have realised the basic truth. You cannot educate by examination. In the ultimate reckoning, the only incentive for higher education is not the temptation of a degree or the acquisition of useful information, but the cultivation of the mind, the stimulation of thought processes and the training for facing new challenges and crucial situations in real life with vision, confidence and courage.

5. Wastage in Higher Education

DR. S C. GOEL

IN a recent seminar on Examination Reform held under the auspices of the Agra University, Professor D S Kothari, Chairman, University Grants Commission described examinations as an 'irrationality' characterised by lack of consistency and stability in the marks awarded by individual examiners as also in respect of the answer books examined by the same examiner at different points of time. It was, for example, noted that an examiner gave 30% marks to the same student, whom he had earlier given 75% marks. This could be attributed to the vagaries of examinations but scientific investigations have also revealed that examination marks are highly unreliable and subject to significant standard errors. A study made by Dr H J Taylor, a former Vice-Chancellor of the Gauhati University came to the conclusion that "more studies need to be made of the precision of these estimates, but in the mean time it should be assumed that the standard error of a mark is not less than 7".* It is, therefore,

* H J Taylor *Three Studies in Examination Technique*, p 6

apparent that the present methods of marking scripts and evaluating the performance of students are not sufficiently reliable. If so, it is incomprehensible why success in an examination should be considered the summum bonum of all educational endeavour. The combined failure rate in respect of some universities holding two examinations has been found to be as high as 81% at the B A and 82% at the B Sc examinations. One is almost inclined to ask if our universities have not deteriorated into institutions for the elimination of the unworthy rather than education of the worthy. It is no wonder that year after year students rise in revolt against this wholly unconscionable and 'irrational' system of examinations. In spite of the glib talk of examination reform no one seems to be seriously thinking of abolishing a system under which the predilections of examiners play an all important role and 40 to 50% students fail every year and of those who pass 50% fail again and so on.

The present open door admission policy of our universities is responsible for the influx into higher education of a great many students who cannot benefit from the courses offered to them, as indicated by the staggering failure rates in the examinations. There are also innumerable cases of students shifting from one course to another or withdrawing before the completion of their studies. Consequently a great wastage of time, money and effort is incurred. A reference has been made elsewhere to studies which indicate that 75% of the students are not able to complete the degree course within the minimum period prescribed for it and that roughly 33% of the students leave the university before completing their courses. To these figures, if we add a failure rate of 40 to 50% at different levels, the situation would appear to be desperate. In contrast to this, in a developed country like the United Kingdom with much larger resources for the education of its students, the overall wastage in higher education inclusive of failure in examinations is only about 14%. The present input-output relations in education in India would hardly bear any meaningful comparisons even with the developing countries of the world.

Failures, wastage and stagnation—all these have an important and direct bearing on the system of education and examinations,

but the contention relating to examination results is more demonstrable since we can look at the record of universities in this field during a period of time. The following table gives the various percentage of passes in the years 1961 and 1968.

Name of the examination*	1961			1968		
	No appeared	No passed	Pass percentage	No appeared	No passed	Pass percentage
B A (17)	70,339	30,037	42.7	1,05,332	64,506	61.2
B.Sc (17)	26,583	12,755	48.0	39,448	23,113	58.5
B Com. (17)	17,182	7,883	45.8	23,686	15,294	64.6
M.A. (15)	12,730	11,051	86.6	22,626	17,860	78.9
M.Sc (17)	3,864	3,044	79.2	6,505	5,192	79.8
M Com (15)	1,595	1,427	90.0	3,167	1,940	61.3

It will be observed from the above table that examination results vary from one faculty to another and keep on varying from year to year. Speaking quantitatively, the pass percentage declined between 1961 and 1968 in M.A. and M. Com. but improved in the B A , B Sc., B. Com , and M.Sc. examinations. The number and proportion of first and second class students, which indicate the qualitative aspect of examination results exhibit a similar tendency as would be evident from the following table.

Name of the examination	1961			1968		
	I	II	III	I	II	III
B.A.	319	2,505	24,666	642	12,874	50,164
B.Sc.	1,812	4,785	6,158	3,022	10,819	8,886†
B Com	44	3,176	4,663	153	4,166	10,975
M.A	497	4,606	5,948	962	9,645	7,253
M.Sc	872	1,704	468	1,480	3,090	622
M.Com.	90	745	592	117	1,388	435

* Figures in brackets indicate the number of universities included in the sample

† Division of 386 students not available

The examination results of individual universities also show variations from one faculty to another and over a period of time making it difficult to draw any significant inferences. However two important conclusions can be drawn firmly from the data, relating to examination results, faculty-wise and university-wise. Firstly the examination results of postgraduate examinations are distinctly superior to undergraduate results both qualitatively and quantitatively. Secondly, the examination results in the faculties of science and commerce are better than the results in the faculty of arts. From these hypotheses, one reaches the inevitable conclusion that, by and large, examination results depend on the quality of the students selected for admission to various courses and the conditions in which teaching and learning are carried on in our universities and colleges.

The above facts and conclusions underscore the need for having a clearly laid down admission policy in order to restrict entry to the universities and colleges to those who have the capacity to benefit from higher education. Such a policy has of course to reckon with the social upsurge for higher education and can be implemented only if the universities take a definite stand for the maintenance of quality at the undergraduate stage as in the case of postgraduate education. Admission tests or qualifying examinations will have to be so devised that they take into consideration the following three important factors which play a vital role in success in an examination.

(a) *Aptitude*

This is the general ability common to all courses. In common usage the term 'aptitude' means interest or attitude but in the current terminology in the field of evaluation, it stands for the basic tools of knowledge. It consists of verbal ability and mathematical ability, i.e., the power of reasoning with words and numbers. Arts courses require a higher verbal ability than science courses and science courses require a higher mathematical ability than arts courses.

(b) *Achievement*

This is ability in special subject fields. The study of different

subjects, e.g. economics, political science, physics, chemistry etc. at the university level requires background knowledge of the subject matter

(c) Motivation

The capacity of the student to respond with imagination and understanding to learning situations and experiences. Motivation can turn some mediocre students into brilliant students and vice-versa

The first important step in the improvement of examination results is in regard to the inputs, which at present are good, bad and indifferent. Generally speaking, the minimum qualifications laid down by the universities for admission to arts and science courses is a pass in the higher secondary examination. This takes into consideration the achievement of the student but no regard is paid to his aptitude and motivation. How crucial are aptitude and motivation for success in a university examination is illustrated by the results of correspondence course students which have remained for a number of years as good as the results of regular students, in spite of the fact that correspondence course students are not exposed to the living voice of the teacher and the atmosphere of the campus. Their better examination results are due to the fact that they have, in general, better motivation and greater verbal ability.

Another important measure for improving the current situation is to lay down the minimum conditions in which teaching and learning are to be carried on in the universities and colleges. Expansion of educational facilities should be commensurate with the provision of academic and physical facilities, e.g., libraries, laboratories, class-rooms, furniture and equipment and above all good teachers who can inspire their students and encourage them to devote themselves assiduously to study and learning. No one has so far made a scientific study of the input-output ratio of higher education in India, but it would be a fair assumption to say that considering the poor output of our universities and colleges, India perhaps has the costliest system of higher education in the world.

We realise that the issues relating to admission of students, modernisation of courses and teaching techniques, science education, medium of instruction, administration and financial requirements of the universities are beset with innumerable difficulties of a socio-economic nature. One may, therefore, turn to the question whether improvements can be effected in the system of examinations within the existing framework of the universities, in order to reduce wastage and achieve better outputs.

Examination is at once a method of evaluation and instrument of good education and guidance. Unfortunately, in India the functions of an examination are generally ignored. There is an urgent need for every college and university to have a close look at its examinations and to interpret examination results from the view point of education and guidance. Such studies can lead to adoption of methods that will help to improve examination results including the percentage of passes and the proportion of first and second class students.

The results of an examination provide valuable data on the basis of which there should be a constant critical review of syllabi, teaching techniques, examinational procedures and so on. For example, in any examination leading to the Bachelor's Degree in arts, it will be found that the failure rate is more than 50%. A further analysis will show that the failure rate is not uniform in respect of all the subjects. Such an analysis has not been done so far, but it will be a fair assumption that the failure rate is much higher in compulsory English than in economics or history or political science. This will obviously call for efforts to strengthen the teaching of English, may be by the provision of more tutorials or more periods or by part of the responsibility being shared by teachers of other subjects.

This subject wise analysis of results should be followed by a detailed examination in respect of each subject. Take for example a paper in economics, carrying 100 marks asking students to answer 5 out of 10 questions. Item analysis for each question and its parts would reveal that there are certain questions which are answered only by a small minority of students or certain questions which even the best students do not attempt. Boards of Studies in different subjects should have this picture before them

giving the percentage of students attempting each question and the proportion of good students (judged by the total marks in a paper) among them. It is possible that the question was vaguely asked or may be there is no literature on the subject or may be the teachers did not pay adequate attention to that question. Such an analysis would be revealing to the teachers, syllabus makers and paper setters alike. This should lead to an improvement of teaching techniques and revision of syllabi, if necessary.

Another factor which is responsible for the high failure rates is the existence of memory-dominated examinations in Indian universities. Since success in examination depends largely on recall of knowledge it is not surprising that out of five students who join a university course, only one is able to obtain the first degree. There is hardly any significant correlation between success in the university examinations classified into first, second and third divisions and success in say, the I A S examination or success in later life. If university examinations were so designed as to test recall of knowledge as well as other educational objectives such as analysis, synthesis, comprehension and evaluation, the final results would be much better. After all, in any society the number of people with good memories is bound to be limited. In our examinations, a student with the power of analysing facts and theories and of evaluating developments would fail if he did not possess a good memory. The examiners often look for the same points which have been enumerated in a text book and to the same method of presentation which is followed in the class room. They are often busy people with no time to consider an original answer at the B A or B Sc level. In setting examination papers universities must seriously consider referring to Bloom's *Taxonomy of Educational Objectives and Evaluation in Higher Education*.

We next come to the question of treating marginal cases in an examination. Universities have generally adopted the method of awarding grace marks and holding supplementary examinations. To save argument, it might be said that these methods are purely arbitrary. The following methods based on recognised statistical procedures may be considered by universities.

(a) Suppose the minimum pass mark in a subject is 33 and there are three subjects. Assuming the standard error of marking to be 5, the passing probability of a student getting 33, 33 and 33 marks is 16 per cent. All students with a passing probability of 16 per cent or above should, therefore, be declared to have passed the examination irrespective of marks in a particular subject. The Delhi University tried this experiment and found that the pass percentage improved by about 20. This, however, involves the use of probability tables and some further work to estimate the standard error, particularly in respect of marks below the pass line. Dr Taylor who has suggested this method has assumed the standard error to be constant for all ranges. It is, however, fair to assume a lower standard error in marginal cases.

(b) Consider two students A and B with marks as under

	<i>Econ</i>	<i>Pol Sc</i>	<i>Hist</i>	<i>Eng</i>	<i>Total</i>
A	33	33	33	33	132
B	50	33	40	25	148

Although student B could make a better economist than A and is perhaps a better student than A in several respects, he would fail and A would pass according to rules in vogue in most of the universities. The logic of a separate pass in each subject at the Bachelor's Degree level is not very clear, when this is not done by the universities in the postgraduate examinations and even at the Bachelor's Degree examination for purposes of classifying students. In view of the high standard error of marking, the rule for a pass in the examination should be a higher percentage of marks in the total and a lower percentage of marks in each subject.

There are several questions like the number of examinations, the holding of examination in parts or compartments, the combining of internal and external marks etc. which have a bearing on examination results. It would be desirable to undertake studies of examination results over a number of years before coming to final conclusions in these matters. Some possible lines of investigation are indicated below.

- (i) Whether examination results are better in universities holding two examinations or in universities holding three examinations (some universities which have switched on from two to three examinations may also be included)
- (ii) A similar study for universities holding examinations in parts, say, 6 papers in the first and 6 papers in the second examination and universities which include all the papers in the final examination
- (iii) Results of hostellers vs day scholars
- (iv) Results of affiliated colleges, constituent colleges and university departments within a university
- (v) Results of universities with a two-year degree course and universities with a three-year degree course
- (vi) A study of marks awarded by teachers in internal tests in universities which take the sessional work of students into account and universities which do not give any credit for such work

Certain measures of reform are urgently called for in regard to the setting of the question paper and combination of marks in different papers and subjects. Some suggestions are given below

- (a) The questions should be distributed over the entire syllabus. The practice of setting 8 or 10 questions from a prescribed syllabus has three distinct disadvantages. Firstly, it results in a flourishing trade in bazar notes and cram books. Secondly, it encourages guessing to such an extent that there is generally a belief among students that for high marks in an examination selective reading is indispensable. Thirdly, the sampling of content makes the examination itself unreliable.
- (b) This leads to a second proposition. A large number of questions each of which demands a short answer should be preferred to a small number of questions calling for lengthy answers.
- (c) The questions should precisely define the direction and scope of the answers desired. The candidate should not be left to guess what is in the mind of the examiner.
- (d) The time available for responding to the questions should

be carefully considered in relation to the amount of writing required for adequate answers

- (e) In order to get maximum discriminations the questions should be of average difficulty. It does not serve any purpose to include in the paper questions which are either very easy or very difficult.
- (f) The paper setter should prepare a tentative outline of answers. It will often reveal weaknesses in the structure of questions that can be corrected prior to the use of the paper. The outline should be checked with reference to a small sample of answer books.
- (g) It is better to arrange answer books question wise rather than student wise. The examiner should first evaluate one question in respect of all students and then the next and so on. The present practice of examining all the answers written by a student and then all the answers written by another student gives rise to the problem of fluctuating standards.
- (h) In order to reduce the halo effect further the examiner should periodically re-check papers examined earlier by him. The marks should be revised if there is a shift of standards.
- (i) Marks in different subjects should be reduced to a common mean and a common standard deviation before they are combined to get the total marks of the student. In an examination involving a number of optional subjects it is important to ensure a certain degree of uniformity in marking. If we combine marks in two subjects say chemistry and mathematics and marks in chemistry vary from 30 to 60 while marks in mathematics vary from 5 to 95 the result will be that mathematics will receive three times the weight of chemistry. In effect the performance of the student will be judged on his ability in mathematics rather than in chemistry. It is therefore desirable that marks are brought to a common mean and standard deviation before they are combined.
- (j) Some universities take a considerable time in conducting university examinations and much more time in declaring the examination results. As a result student's time is wasted and the teaching time available to the affiliated

colleges and university departments is also reduced. A large number of students rush for admission to courses not suited to their aptitudes because they find that it is difficult to secure admission to alternative courses of their choice. If examinations are to be conducted with the utmost speed and efficiency, the examinational machinery will have to be so geared that it can serve the needs of an ever-increasing number of students and one of the largest student populations in the world.

Many of the ideas presented above have been discussed in the reports of various commissions and committees, and some universities have also shown a keen interest in examination reforms. A stage has now been reached when specific measures should be undertaken to implement these ideas and suggestions in order to make examination an instrument of evaluation and good education and not merely a weapon for the massacre of students year after year.

6. *The Open University Project*

DR. G S. MANSUKHANI

DURING the last few years, the knowledge explosion and the population explosion have created excessive hunger for education—specially, higher education. The traditional universities and institutes of higher learning are not in a position to cope with the demand. Moreover, the development of science and technology has created new teaching machines and techniques of mass education which are bound to revolutionise the system of education and to make the tempo of learning quicker and easier. The situation of increasing numbers of students and the inadequate resources has naturally led to a fresh thinking on the need of a new system of instruction. The revolutionary concept of the Open University in U.K. points out a way of meeting the rapidly growing demand for higher education.

The idea of a university without cloisters is not entirely new. Countries like France, West Germany, Japan, New Zealand and Australia have tried this experiment with limited success. The problems of isolated and scattered communities which need

education of a non traditional type—study as and when you like—can be best solved not by university institutions, but by new experiments in higher education. The University of New South Wales has established a *Radio University*, where instruction in subjects like engineering and technology is supplemented by seminars and laboratory work done on the campus itself.

The Open University in U.K. started functioning on the 1st of January, 1971 at Milton Keynes situated 50 miles north of London. It has enrolled 25,000 students and the expenditure during 1971 is expected to be £3.5 million. The cost per student will be much lower than that in a traditional university. The teaching method includes correspondence courses, radio-listening, television viewing, reproduction of taped material, discussion and personal contacts. For science students, a special kit has been devised to enable them to perform experiments in the privacy of their own homes. The B.B.C. is broadcasting special programmes for 30 hours a week on television and for the same period on radio.

The Open University offers three main areas for study—undergraduate and postgraduate, post-experience training and education, and research for higher degrees. The integrated training is available in arts, social sciences, sciences and mathematics. Each undergraduate course lasts for 36 weeks. Instruction for higher degrees like B.Phil., M.Phil. and Ph.D., will be provided from 1972. The first year will provide foundation course in one of the following disciplines—mathematics, science, arts and social sciences. The courses in technology and education will be provided from 1972. Assessment of periodical written work will be followed by an annual examination. Success at the yearly examination will entitle a student to a credit. Degrees will be awarded on the accumulation of credits—6 for a Pass degree and 8 for an Honours degree. A student will not take more than two courses in a year. After the foundation course, the main line of study will consist of four components. Each component will be covered in two courses, each a year long and each counting for a credit. The second course will be more advanced than the first. However, the students will have a great variety of subjects to choose from, for example, a student can take up

mathematics with languages or music with physics. The Open University permits a student to take a degree over any period and does not prescribe a maximum. The academic year begins in January and ends in December.

The advantages of the Open University are obvious. Firstly, the low cost—one half to one third of the expenditure involved in starting a conventional university—is a welcome feature of this system. Moreover, the student intake is five times as large as the normal enrolment at a traditional university. Even with an anticipated student failure-rate of 30 per cent, the cost per student will be nominal. Secondly, the small staff needed to run the Open University has obvious advantages. The total number of full time staff at the Open University is 300 which is much less than the staff at a traditional university. Moreover, the students will have to pay very little for taking courses at the Open University. The fees are less than 50 pounds a year. Moreover, grants are available from the local educational authorities for the payment of fees. The students may live far from the study-centres and learn in the privacy of their own homes. The students will keep their jobs and so contribute to the nation's wealth and at the same time improve their educational level. The response of the British community has been astonishing, more than 42 000 applicants in U.K. applied for 25,000 places. Talking to some students, one could hear their reasons: "I have no desire to turn into a cabbage,—now I need education like an addict needs drugs,—I regard a degree as a passport to the large money."

New techniques

The instructional system of the Open University is based on the concept of teaching at a distance through an integrated multimedia system. It will offer a combination of learning resources and the responses of the students will be fed back into the system to improve the quality of instruction. The instructional system consists of the following resources:

The first resource is the correspondence package mailed once a month containing four units of work along with self-assessment exercises. Each weekly correspondence unit contains

the following material : (a) The text (divided into 3 channels); (b) A list of objectives; (c) Self-assessment lists and remedial comments; (d) A glossary of new terms; (e) A conceptual model; (f) Notes on T.V. and Radio Programmes; (g) Notes on experiments (in case of science subjects); (h) Computer (or Tutor) marked assessment tests.

The second learning resource is the part-time class tutor. His services will be available to the students in addition to those of the correspondence tutor. The work of the class tutor will be co-ordinated by the staff tutor working at the regional centres of the Open University.

The third learning resource is the study centre where students will meet the class tutor and the counsellor and the centre will have facilities such as tape recorders, projectors, and a library containing the broadcast material. The fourth learning resource is the summer school. Each student will attend the summer school for one week in each year. Laboratory work will be possible at the science summer school. At the headquarters, there is a course team for building up radio broadcasts and telecast films which are relayed once a week for 25 minutes each. Attached to each course team is a co-ordinator whose task is to act as a link with service groups, like the publishing office and the media development experts. So there is an unusual degree of division of labour and specialisation in the development and implementation of the instructional programme. For example, educational technologists have the sole responsibility of developing the course as an educational experience. The class tutor and correspondence tutor and co-ordinator are concerned with actual instruction—reading, commenting, marking assignments, conducting discussions and advising and counselling on general problems of study.

There will not be much strain on an ordinary student. Out of 10 hours of learning a week, he will watch television and listen to the radio broadcast for 25 minutes each during the week. The remaining nine hours go to writing, reading and the answering of tests. The Open University expects to market teaching materials like printed lessons, radio-tapes and T.V. films to

other universities in U K and to overseas governments. It also aims at offering a consultancy service on the development of allied systems, utilising the techniques of the Open University to situations obtained in other countries. The institute of educational technology at the Open University utilises the latest gadgets of science and devises new tools for the purpose of mass instruction. The institute has adopted the 'systems approach', that is, a kind of pattern in which all the three contributors, namely, men, money and materials have their proper places. These three components are synthesised into an integrated whole. Outside the university, the B B C provides production and broadcast facilities for television and radio.

American experiment

The Open University experiment has aroused world wide interest. Recently, the State University of New York and the New York State Education Department have planned to start off campus degree programmes with the help of \$ 1.8 million contributed by the Carnegie Corporation and the Ford Foundation. Harold Howe second Vice-President of the Ford Foundation and former U S Commissioner of Education said in this connection "In the past, we have always asked the students to adjust to the institution. Now, we will be able to adjust the institution so that it will fit the needs of the people". Under the American plan, students with High School certificates can get a degree without going on the campus except for placement and counselling. Courses can be taken independently at home through correspondence and State television broadcasts and tape recorder cassettes. The tutorial classes with faculty members may be once a month or in some cases once a year for advanced students. Certain students will be able to pass the newly constructed college equivalency (entrance) examination and receive a new Associate in Arts degree (A.A.) after two years, or the regular B.A. degree after four years. At least 500 students are expected to be enrolled during 1971-72 and the number will rise to 10 000 in 1974. The cost per student will be reduced, because of economies of scale from the present annual cost of

2,300 dollars to 1,150 dollars per student in 1974* Under the State Education Department's programmes, the Board of Regents will award a "Regents Degree" on the basis of what the student knows, rather than where and how he has learnt it No considerations of age or place of residence will be taken into account for the award of degrees The results are expected to be good on account of the great maturity and high motivation of students On the other hand some people fear that we may have a flood of second-rate degrees Besides this, the intangible benefits of campus life—meaningful dialogue and exchange of views and the art of maintaining human relations necessitated by corporate living—will be conspicuous by their absence But perhaps, the advantages greatly outweigh and overwhelm the small weaknesses of the Open University system

Japanese project

Japan has recently started Asia's first 'Open University' called the University of the Air on a commercial radio network for an experimental period of six months If the experiment is successful, a bigger project will be launched in 1973 with TV lessons At present radio-lessons will be broadcast for four days per week in domestic science, literature, industrial administration and engineering There is no entrance examination The new university will be free from faculty student conflicts and student-police clashes The complete project will be implemented in seven years at a total cost of 120 million US dollars and will eventually offer 15 courses

German scheme

Under the University Skeleton Law passed by the German Federal Republic in 1970 providing for a comprehensive and democratic pattern of education, there is a provision for the Open University The University will be divided into faculties and will include colleges, academies and technical institutes The study will be organised around graded courses—Basic, Main, Continuation and Contact Continuation and Contact courses will be devoted mainly to research and professional

* *Times Educational Suppl* 5th March 1971

competence The organisation of studies will involve a continual revision of examination techniques and the transparency and objectivisation of the examination system There will be a modification of teaching methods, selection of materials and pedagogical training of teachers

At the proposed West German Open University, the rigidity of the professional Head of the Department of the traditional university will be replaced by the organisation of subject areas and schools The arrangement of the media, the setting up of course schedules and the arrangement of staff will be subject to collective decision, with a regular rotation of departmental headships Rules regarding study courses and examinations will be framed by the department but in case of interdisciplinary areas, a joint commission will be set up

The various bodies in the university will include a departmental assembly, departmental representation, university representation and a control board and their proceedings will be published The university assembly will be elected by all the members of the university and they will elect the members to departmental representation and the university representation and on the control board Research will be organised around centres or groups of departments working together Funds will not be tied to people but to programmes It has been decided not to keep permanent administrative staff so that there may be sufficient mobility between university and society

Egypt is exploring the possibility of starting something on the pattern of the Open University for meeting the needs of higher education of its population It has invited experts from the Open University for this purpose As one of the British educationists said very aptly "The course system of the Open University will be one of the important British exports to the developing countries "

Implications for India

In India, a beginning in untraditional higher education was made as early as 1962 The Delhi University Directorate of Correspondence Courses started the correspondence course for

B.A. for students in different parts of India. The Education Commission desired that correspondence courses be further strengthened and extended : "We recommend that the opportunities for part-time education through evening colleges and for own-time education through programmes like correspondence courses should be extended as widely as possible and should also include courses in science and technology... We suggest that by 1986, at least a third of the total enrolment in higher education could with advantage be provided through a system of correspondence courses and evening colleges". At the moment, the enrolment in correspondence courses is about 1% of the total enrolment of regular students in universities and colleges. If at least one university in each State were to offer correspondence courses at the first degree level in the regional language and diplomas in job-oriented courses like electronics, radio servicing, refrigeration, lock-smithy, plumbing, surveying and workshop practice, the enrolment in correspondence courses could increase manifold

The present position of correspondence courses is as under :

<i>University/College</i>	<i>Courses</i>	<i>Enrolment 1970-71</i>
Delhi University	B A Pass B Sc General B Com.	15,000
Punjab University	B.A. Pass	3,751
Mysore	B A. Pass	2,276
Meerut	B.A Pass	1,812
Rajasthan	B Com	1,267
Central Institute of Education, Delhi	B Ed	162
Regional College of Education, Ajmer	B Ed.	275
Regional College of Education, Bhubaneswar	B Ed	260
Regional College of Education, Mysore	B Ed	220
TOTAL		25,023

Correspondence courses have been started at Andhra (B A and B Com), Bombay (B A and B Com), Panjab (B A), Madurai (B A), and Himachal Universities (B A and M A) from July 1971. The Panjab University has enrolled 9682 students during 1971-72. Besides this, 33 universities have allowed 296 morning/evening colleges to teach various degree courses.

A seminar on the Open University was held in New Delhi in December 1970 in which British and American experts participated. The then Education Minister, Dr V K R V Rao who presided over the inaugural function commended the experiment for its uniqueness. He emphasised the fact that the university is open—no age bar, no sex bar, no residential bar—and that it does not insist on any formal educational requirements for admission, it caters to the needs of all those who are employed and do not wish to undergo full time instruction. Moreover, it ensures the home delivery of instruction and does not compel the students to fixed hours of study. Besides, the programme is student centred. The student is left to progress at his own pace and in his own privacy and to study according to his own convenience. He is permitted great elasticity in the selection of subjects. Besides this, the instructional system is absolutely new. It is multi media combining the printed word with radio talks and film display, guidance and counselling by tutors in local centres and participation in full time instruction in summer schools which is very much acceptable to the student. It secures the economies of scale by giving the maximum return for the minimum of financial investment. In spite of the absence of face to face situation the feed back from the students must ultimately improve the system which may even have a favourable impact on the usual class room techniques. Moreover, it conveys high quality learning material to each individual in his own surroundings. It is quite likely that the new techniques may also lead to enrichment of the teaching system in the traditional universities.

In India, the demand for higher education is increasing by about 11 to 13 per cent every year. At the moment we have 3 million students in our universities and by the end of the seventies, the figures will rise to over 5 million. There are more than 3,600 colleges in India and there is a 10 per cent

increase in the institutes of higher learning every year. It is not possible to increase the investment on higher education by 10 per cent every year to meet the increase in numbers. In view of the rising price level, the gap between the additional enrolment and the facilities provided is likely to get widened further. Moreover, it is not easy to increase the number of teachers at the rate at which the student enrolment is going up. Dr V K R V Rao said in this connection:

‘ In a situation of this type where the explosion of enrolment in higher education has to continue at a terrific pace and where available resources in terms of men and money are extremely limited, the obvious solution, if proper standards are to be maintained, is to adopt the Open University model with the provision of higher education on part time or own time basis. This will reduce the capital costs which are very heavy for institutions of full time higher education, and what is equally important, reduce the recurring cost per student as well. This is probably the only way in which, we in India, can meet the ever-increasing demand for higher education and also maintain standards ”

Some modifications

The concept and the scope of the Open University will have to be modified to meet the demands of developing countries. In developed countries most of the students go up to the secondary level examination, whereas in developing countries, many students drop out from the school at various points and there is a great deal of adult illiteracy. The number of drop-outs, the neo-literates and adults wanting education is many times more than the number of university students. The Open University should be able to cater to the needs of such people who generally remain outside the university system. In India, particularly in rural areas, students drop out very early from the school because they are required to work at the farm in order to help towards earning for the family. The Open University programmes can be of great use to neo-literates who can read and write in a limited way but must continue their studies in one form or another, failing which they will again relapse into

illiteracy The Open University can arrange programmes of continuing post-literacy education for the neo-literates Moreover, the lessons and the equipment used at the Open University could be made available to other private candidates for enriching their knowledge as well as to students in the traditional universities The most important criterion of maintaining standards is good instruction The Open University will have the resources of a large number of good teachers in preparing lessons and lectures The large scale use of such lessons will help in improving standards in our colleges It is very difficult to multiply the number of good teachers but it is quite easy to make the lessons of good teachers available to students on tape or video-recorder

In India, we have to solve the problem on both a short-term and a long term basis The short term solution would include an extensive use of correspondence courses combined with available radio time to develop a programme of mass instruction for all the groups whose educational aspirations have to be met A long term programme will have to await the extension of the T V network It is thought that 8 to 10 hours a day of television programmes from different stations will be adequate for the instructional system

In this connection, Mr T R Jayaraman* has mentioned the difficulties in the extension of radio and television facilities in support of university courses in India For starting a full time radio course at the undergraduate level in the regional language, at least 1,500 students paying an annual fee of Rs 200/- must be enrolled in a particular radio-coverage area to make the course viable However, English or Hindi medium degree course could be useful to a large section of students and could be transmitted through a 1,000 kw transmitter located near Nagpur so as to cover the entire country The non availability of frequencies may also pose serious problems in setting up small local transmission stations Another way of solving the problem is through cheap cassette type magnetic tape recorders. The tapes could be played at the local centre or in the students' homes at any time Both from the point of view of cost and

availability, the magnetic tape system is preferable to transmission through radio stations

All India Radio, through its Delhi, Madras and Jullundur stations has been offering radio lessons in support of correspondence courses. The *Yunvani* programme has also to strengthen the taped lecture broadcast programme for the benefit of university students

Educational television in India is yet in its infancy. In 1966, the Indian Institute of Technology, Kanpur, installed with U S A aid, a closed circuit T V studio. The studio is run by the students and the faculty and an hour's educational programme is transmitted daily. The Government of India has not allowed it a radiating licence, with the result that the programme benefits only the students of the institute. If the Government were to permit the Institute to radiate its programmes, it could easily cater to the needs of the rural population in the area and the students of Kanpur University. In fact it could develop some extension courses for the agricultural section of the community in the region. Lessons on television could also supplement and enrich the formal teaching in the local colleges. The television lecture would not only impart relevant information but also excite the minds of students so that they would continue to think and discover answers to related problems.

The IIT T V Centre, Kanpur proposes to start a course on T V software programming techniques and audience research. It has also prepared a blue print of a project called "Project Acme" for a hybrid air borne satellite system. Air borne T V will take care of regional coverage, while the satellite will help in countrywide distribution and communication. The regional touch and background are necessary for the sake of realism, while the national hook up through the proposed new satellite over the Indian ocean will remove linguistic barriers and help national integration.

The Open University project in India may have to wait till 1973, when the Satellite Instruction Television Experiment (SITE) is to be launched by the U S National Aeronautics and

Space Administration The establishment of T V Stations at Amritsar, Bombay, Madras Kanpur, Lucknow, Srinagar and the strengthening of the Youth Forum programmes will also take sometime Moreover, the delay in the preparation of the necessary T V software and the bulk manufacture of low cost radio and T V receivers and tape recorders and cassettes may make one feel that the Open University will not come into being before the middle of the seventies In the meantime the experience gained by the All India Radio and its educational programmes on radio and television will prove a great asset in planning the instructional system of the proposed Open University A proper assessment of resources and research in media development will no doubt help in the launching of this bold experiment in higher education

The crucial question is Will the Open University erode the quality of higher education? Perhaps not if it secures the services of good teachers and utilises the feed back from the students The students who generally seek admission to such a university are highly motivated and pay for their own instruction in leisure hours The advantages of face to-face dialogues with teachers are partly secured by personal contact programme or the summer school There is however one lacuna the students have no scope for corporate living and participation in cultural activities or sports Subject to these limitations there is a reasonable expectation that in spite of the large enrolment and considerable number of drop-outs the average end product of the Open University will compare favourably with the product of the traditional university

7. *Role of University in Adult Education*

DR. SUSHILA MEHTA

TO some scholars in India the terms 'University' and 'Adult education' would sound incompatible or rather contradictory in nature. A university is generally associated with higher education while adult education in India is associated with the vast illiterate rural and urban masses. Educationists and scholars often look askance at a subject like the role of university in adult education. Even university teachers doubt the wisdom of using highly developed talents and resources of universities for teaching illiterate adults. To others the very programme of adult education seems superfluous as there are many other means, methods and media for the education of adults such as newspapers, radio and television.

On the other hand, planners and administrators find that efforts at economic transformation of the country through planned processes of industrial and agricultural development are not yielding expected results. Among other things, these efforts

are greatly hampered by the existence of mass illiteracy among farmers and workers. Changes in political structure and the processes of decentralisation of power at state, district, block and village levels generate many unanticipated consequences like social tensions between groups and communities. The violent reactions of vested-interest groups and newly emerging pressure groups have attracted attention of thinkers, intellectuals, scholars and sociologists. Classical theories of social change as developed by philosophers, thinkers and writers like Hegel, Darwin, Marx and Max Weber seem to be too abstract and curiously inadequate to explain the unanticipated consequences of socio-political economic changes in India. Sociologists, scholars and writers are, as it were, called upon to provide "explanation", through studies, investigations and research. As in many other developing countries, social change in India is resultant of a unique conjunction of considerable diversity of conditions and multiplicity of factors. One of the important conditions of such a change in India is to be found in a highly developed social structure and rigid hierarchy of groups and communities. With the adoption of political changes and the new constitution, India enjoys the distinction of being the largest democracy in the world. Democratic institutions are, however, super imposed on a rigidly stratified social structure with its hierarchical values of group relations based on concepts of 'Varnashram dharma'. Democracy, on the other hand, presumes equality of all citizens and egalitarian values in social relations. Adoption of democracy therefore, involves changes at deeper levels of value-system. This again means enlightened and intelligent participation of all the members and groups in the processes of acceptance and adoption of changes in attitudes and behaviour. It is well known to all political pundits that democracy is an intricate and difficult form of government. It is even more complicated in a vast sub-continent like India with great diversities of religions, languages and levels of economic development of groups and communities. To realise the complex implications of public issues in such a democracy, the citizens have to acquire a certain minimum level of education and enlightenment. But it is well known that a large majority of Indian citizens are as yet illiterate. Even in 1971, as many of 70 out of every hundred adults in India do not know how to read or write.

"If this change on a grand scale is to be achieved", says the Education Commission (1964 66) and it goes on, "without violent revolution (and even then it would still be necessary), there is one instrument, and one instrument only, that can be used : EDUCATION"*. In order to bring about socio-political-economic revolution in India, the Commission has emphasised the need for bringing about a revolution in the educational system itself. The existing educational system is completely inadequate to meet a challenge of such a vast proportion. "The present system of education", the Education Commission points out, "designed to meet the needs of an imperial administration within the limitations set by a feudal and traditional society will need radical changes if it is to meet the purposes of a modernising, democratic and socialist society—changes in objectives, in content, in teaching methods, in programmes, in size and composition of the student body, in the selection and professional preparation of teachers and organisation. In fact what is needed is a revolution in education which in turn will set in motion the much desired social, economic and cultural revolution."

In changing societies, education and especially institutions of higher learning function not merely as agencies of passing on the cultural heritage from one generation to another but also as diffusion centres of new ideas, new and scientific knowledge, better methods of agricultural and industrial production, better techniques of distribution and transport etc. The traditional Indian concept of education as a process of cultural refinement and personal development is no longer adequate. Education now provides for training in earning a livelihood through helping students to find their vocations and acquire the competence through necessary training in many new and emerging vocations and professions. With the advent of political and economic development, higher education in India has undergone a phenomenal process of expansion and diversification. While arts and science institutions since Independence have increased from 542 to 3600, the number of students on their rolls increased approximately from 4 to 26 lakhs and expenditure increased from 17.68

crores to 124 11 crores of rupees per annum. Similarly diversification of courses in various fields like medicine, engineering, physics, chemistry, economics, sociology has led to the development of minute specialisations in each branch of study. In a subject like engineering alone, there are innumerable branches like structural engineering, systems engineering, aeronautical engineering etc. With the development of new methods and techniques in farming and agriculture, a number of agricultural universities are coming up at the rate of one for each State in India. Some of the agricultural universities have special departments for soil-testing, animal husbandry, plant-diseases and development of new seeds.

In developing societies, a great deal more than what is accomplished is expected of education and especially institutions of higher learning. However, it is usually found that some of these expectations remain pious platitudes of planners and cherished hopes of community leaders. By allotting more funds, equipments and staff it is generally presumed that education would act like a magic wand and perform miracles. But it is not realised that even educational institutions are prisoners of their own past traditions. Caught in the dead wood of the past cultural heritage and outmoded ideas of their proper functions, the educational institutions do not have the organisational structure which can respond to the fast changing politico-economic situations. While political and economic events are taking place in the country at a breath taking pace before our very eyes, the universities are still struggling with old notions about their proper status, role and functions in the total social system. To find effective linkage between socio-economic needs of the community on the one hand and personality needs of the growing youth on the other is in itself a complex process of socio-psychic amalgamation. Added to it are the great complexities of a fast changing politico-economic life of the community on the one hand and rising expectations and aspirations of modern youth on the other. In any study of the functioning of modern Indian universities one cannot afford to forget the vital fact that some of the major universities in India were established during the time of British rule, more or less on the pattern of London university of early days. Like the British universities of those days, their Indian

counterparts were concerned with two major functions viz. (1) dissemination of knowledge to the young through class-room teaching and (2) expansion of knowledge through research and investigation

During the last century in Britain these early ideas and concepts about the functions of the university have undergone changes. As early as 1869, Jacob Burckhardt had a vision of the wider role of the university in the community. Between the years from 1854 and 1873, John Ruskin and many other Victorian academics started a process of rethinking on the functions of the university. In the last quarter of the 19th century, Stuart at Cambridge and Jowett at Oxford had convinced their universities that the class room function of the university was no longer enough. The universities should extend higher education outside their walls to remedy grave educational deficiencies and disparities in the adult community.

At about this time, ideas about university education were changing in U.S.A. It was being increasingly realised that in a rapidly changing civilisation, constantly modified by technological advance, the schools, can no longer provide all the education and training needed by a man throughout his life. The traditional idea of "education period" in life was giving place to the idea that learning is a life-long process. By 1891 extension activities had been started in 28 States of the U.S.A. The University of Chicago had announced a comprehensive University Extension Division at about the same time (1891-92). The University of Wisconsin re-organised its Extension Division and brought about a change in the subjects taught in adult education by 1906. Instead of teaching cultural and academic subjects, the emphasis now shifted to problems directly related to agriculture, industries and other occupations of the surrounding community. In the opinion of Charles R. Van Hise, the President of the State University of Wisconsin, the university had a special responsibility to investigate all problems relating to agriculture and industries of the people of the State which supported the university. In 1915 speaking on "The University Extension Function in the Modern University" President Van Hise said, "If a university is to have as its ideal, service on the broadest

basis it cannot escape taking on the function of carrying knowledge to the people. This is but another phraseology for university extension, if this be defined as extension of knowledge to the masses rather than extension of the scope of the university along traditional lines."

In the last few decades this process of rethinking on the functions of modern universities has gathered momentum in many countries. A pointed attention was drawn to it by N A M Mackenzie, the President of the University of British Columbia who wrote in his report of 1952 "The three functions of a university to which I have referred, the accumulation of new knowledge, the perpetuation of our cultural inheritance and professional training, are all thoroughly accepted by both the university and the supporting public, though there will be continuing arguments about relative emphasis which should be given to each. There is however, another primary function of universities in our kind of societies, another absolute need even less understood to which I should like to pay particular attention at this time. I refer to University Extension. community services in adult education, there is in our country no institution other than the university with so many of the attributes or so many of the qualified persons to carry out this work."

The concept of university as rather exclusive preserve of a selected section of society i.e. the scholarly class or the elite had held its ground in India till comparatively recent times. However, due to the impact of a rapidly developing politico-economic situation and trends in other countries, this so-called "ivory-tower" concept of university is fast giving way to a new realisation on the part of a few scholars that the university has also an obligation to the larger community in addition to its functions of teaching the young and conducting research. The explosion of knowledge in modern times created a need for carrying new ideas and techniques to the people, in all walks of life. Moreover, a sense of obligation stems, among other things from the fact that most of finance of a modern university comes largely from public funds to which all tax payers rich and poor contribute. This obligation can best be served through a sense of involvement in the life of the community and applying academic know-

ledge at the command of university for the solution of community problems

An awareness of the need of the modern type of adult education has been gradually emerging in the country during the national struggle for Independence. Himself a born teacher, Gandhiji had brought about a great awakening among Indian masses through his speeches, discussions and writing. For him, the very struggle for Independence itself was a great process of adult education. During this stewardship of the mass struggle he had propounded a new philosophy of adult education in India. For, he reiterated that the freedom of a nation does not consist merely in political emancipation of the country, nor even in economic prosperity. The real freedom of a nation begins with the liberation of the minds of the people. Knowledge and education is that light which liberates the minds of illiterate masses from the darkness of ignorance and the thralldom of here and now. After Independence and acceptance of planned progress of development through Five-Year Plans, adult education in India has acquired a new significance, an added urgency. The philosophy of adult education in a new and developing democracy like India, cannot aim at any thing less than a free, enlightened and responsible citizenship. With the advent of Panchayat Raj at district, block and village levels, the rural adults who have become the masters of their own local self-governing institutions need literacy, enlightenment and knowledge to understand the complicated processes of government and modern State. The dream of a new society—a socialistic pattern of society—cannot be built up without the intelligent participation of all citizens with deep sense of patriotism and responsibility. Adult education for eradication of illiteracy, conquest of superstitions, freedom from taboos and astrology, development of rational attitudes and recognition of one's role as a responsible citizen are the basic conditions for the fulfilment of such a great dream.

Considering the magnitude of illiteracy in India, universities are like little oases of teaching and learning in the midst of vast deserts of illiteracy and ignorance. The importance of what Rance Peterson and William Peterson consider "remedial" adult education cannot be over-emphasised in this country.

Even if we take the age-groups of 15-44 ineffective working groups and concentrate adult education efforts on them, our estimates give us 150 million illiterate adults. To educate such vast masses even in bare minimum of what UNESCO called "fundamental education" would require massive efforts in terms of manpower and financial resources. Even to eradicate illiteracy among them, we have to adopt some unorthodox methods. Universities and colleges are expected to play a vital role in mobilising resources of educated persons, students, youths, volunteers, teachers and others for the work of eradication of illiteracy. Unless this fundamental responsibility is recognised, accepted and implemented by universities there is no hope of eradicating adult illiteracy in the near future. How this work can be organised and implemented through National Service Scheme will be considered elsewhere. If Indian universities recognise and accept this fundamental social responsibility, it would add a new dimension to their involvement in community service.

As in other developing countries, adult education in India has to provide a vital need of the community through what is called "vocational education". It is urgent to provide the training and means by which adults can improve themselves in the way they earn a living, either within their vocation or by changing to another. In Indian society where the traditional handicrafts and occupations are giving way to new and emerging vocations and services, the need to fill in the gap by mobilising the existing native skills and providing training in new techniques and methods cannot be over-emphasised. The new and emerging vocations, professions and services require skilled and trained workers, while the unemployed crafts men need work. Adult education can do yeo-maa's service to the nation and community by finding the areas of deficiencies in training of workers and alleviating specific shortages of trained and professional personnel in different occupational fields. In this category even house wives need new knowledge and techniques for performing better their roles as house wives and mothers.

In modern developing societies the concept of education as a life-long process of continuing education derives its validity from the fact that the present-day society is not based on static

conditions but rapid and dynamic changes in all walks of life. The frontiers of knowledge are constantly expanding, science and technology are taking rapid strides. The explosion of knowledge and new ideas in the scientific world alone produce new documents at the rate of 15 million pages annually. New techniques in industrial production make handicrafts obsolete. New methods in agricultural production are ushering in green revolution in different parts of the country. The rate of change in technology is considered to be three to four times within the life-span of a working man today. If the working life span of a man is considered to be 35 to 40 years, technology of production might change three times within this period. In these circumstances it would not be possible to replace the man who had worked for long years and acquired considerable skill and experience in the field through old methods. It would, however, be possible and even more desirable to train the man in the new techniques and knowledge in acquiring new skills by providing opportunities for vocational education and re-training. The concept of 'Continuing education' is gaining currency and popularity, particularly as a new dimension of the role of universities in adult education. If the universities accept the responsibility of improving skills of the vast manpower resources in India, they would render invaluable service to the community and meet an urgently-felt need of national development. A logical implication of continuing education is that in today's world everyone must keep on learning and improving his skill which is now so crucial that this alone seems to be a good justification for universities to undertake these vital new activities.

The conditions in economic, political and social life are also fast changing with new inventions and adoption of new technology in the modes or media of communication and travel. A citizen's behaviour and social attitudes would become obsolete if he remains satisfied with the education he received while he was a student. He has to supplement his social skills and attitudes constantly in order to keep pace with the changing times. This is a brave new challenge which modern dynamic and industrial societies have thrown up to universities and to the educational system as a whole. Universities could ignore such a challenge at their own cost. Unless universities establish meaningful contacts

through community education, the content of knowledge and information they impart to the young would be outmoded and obsolete. If the universities do not respond to the aspirations and problems of the community, a climate of unreality will dominate in their efforts in educating the young and thus they are likely to lose their relevance and leadership as institutions of higher learning in the community. As has been pointedly brought out by Malcolm S. Adiseshiah in his interesting book *Let my Country Awake* "The stakes are too great, the dimensions of underdevelopment too staggering, the vicious circle it generates too implacable for further patience and forbearance. In the life and death struggle against the interlocking stranglehold of ignorance and poverty, the mission of education is clear. It is to awaken men and nations to the infinite possibilities of growth and change that exist within them. But education must itself grow and change to carry out that mission. It must set its house in order. It must forge its plough shares into swords"*

If the universities move with changing times and accept the new challenge of providing adult education and vocational training for adults, they would infinitely enhance their social stature and public image. They would then be in the forefront of providing leadership in socio-economic development. However, it is obvious that acceptance of this vital new function would need altering radically the educational process of curriculum development, methods of teaching and the whole concept of evaluation. Besides it would mean vocationalisation of education. Knowledge, information and training would have to be geared to the practical need of occupations prevalent or emerging in surrounding communities. This would also require vital and organic links with the industries, factories, farms and other kinds of services. It would also involve not only specialisation of training in different vocations and professions but also constant vigilance and sensitivity to new developments in techniques, methods and information in the fields of specialisation. Teaching would not stop at giving information but it would involve practical training in developing new skills and new attitudes. Lectures and discussions are no longer enough. Demonstrations, field work, practical work, and use of other audio-visual aids would be necessary.

* Malcolm S. Adiseshiah *Let My Country Awake*, p. 190

Every year universities would have to revise courses and hunt for new talents and expertise in their fields of specialisation. Development of appropriate facilities like laboratories and libraries is essential. Besides, the different departments would have to develop various forums for exchange of ideas and knowledge for scholars and research workers. Lastly the whole concept of evaluation of the educational activities has to be radically altered. Rote learning and passing of examination would no longer suffice. A better and more adequate test of training would be found in the development of skills and efficiency of workers and increase of productivity in agriculture and industries.

Along with vocational adult education programmes, the need for citizenship education is also emphasised in modern democracies. A citizen in a modern democracy has not only to know the constitution and the functioning of political institutions but also to develop objective attitudes to analyse many complicated public issues which often arise in modern states. In the ding dong battles of ideologies of political parties, where trade unions and occupational associations strive for his allegiance, he has to develop maturity of judgement to strike a balance between individual, group and national interests which claim his loyalties. In short, as an active citizen he is expected to be constantly reading and discussing current issues in a free and academic atmosphere in order to keep himself well informed and well prepared for his role as a citizen of a modern democracy.

Besides political activities, all modern states develop a large number of welfare activities. Big sums of money are spent on creating public facilities like public parks, recreation centres, museums, libraries, renovation of historical places and development of picnic spots. Proper use of many of these facilities would also involve enlightened public participation. In many under-developed countries, as in India, it is usually found that many of these facilities are wasted due to misuse and vandalism of some anti-social elements in the community. Such public facilities as exist in India like railways, hospitals, public parks, play grounds, libraries incur big losses due to misuse by some anti-social elements and vested interests. Preservation of cultural heritage and proper use of public facilities rest on a deep sense of patriotism.

and adequate concept of social responsibilities on the part of citizens. Through different methods, a deep sense of social responsibility has to be developed among the citizens. Adult education and community education programmes through films and other media may serve useful purposes if they are geared to the needed changes in attitudes and behaviour of the people.

In a developing country like India, involved in large programmes of community development, adult education occupies an important place in the training of community leaders. By and large it is found that community leaders have wide influence but they do not have the technical knowledge viz., laws, rules, procedures etc., necessary to help them in public duties which are becoming more and more exacting. Seminars and study clubs, initiated by universities have the advantage of a free and academic atmosphere and community leaders from all walks of life can derive immense benefit from them.

The great cultural heritage of India which is found in the various languages like Tamil, Bengali, Marathi, Gujarati, Punjabi, Urdu needs a national focus. If through language classes the adult learns an Indian language other than his own mother tongue, he would find a great treasure of literature and knowledge which would incidentally forge a solid link in the process of emotional integration of language groups and provinces. A comparative study of the basic philosophies of the different religions would also pave the way for mutual understanding of Hindus, Muslims, Parsis, Christians and others. It is only in the academic atmosphere of a university that such discussion and dialogue can be carried on without tensions. It is in the free and congenial atmosphere of universities that links between cultural heritage of local areas and wider national trends and developments can be forged.

The various artistic forms of crafts, folk arts, and folk culture which have been flourishing in various districts and regions in the country at local level also need integration and re-interpretation in the wider national context. It is in a university that links between the traditional cultural heritage and the modern trends in cultural activities can be established. Through systematic investigations the folk arts, in its various forms, can be studied and new

orientation can be developed in the changed context. These can take the forms of societies, clubs and such other organisations functioning with the help of universities. Universities can assist them in organising exhibitions, stage performances and festivals, etc. Community activities of this type have great educational significance. They can also accelerate the processes of national integration through cultural forums.

"A university", remarked the late Pandit Jawaharlal Nebrū, while addressing Allahabad graduates in 1947, "stands for humanism, for tolerance, for reason, for the adventure of ideas and the search for truth." Universities have to find ways and means of inculcating the new values of adventure of ideas and search for truth. These are values which foster the scientific spirit of inquiry and develop rational attitudes towards natural phenomena. Inculcating the emerging values of democracy, secularism, love of entire country irrespective of caste, creed or race in community life and social relations would need much thoughtful programme and planning in adult education. The free, academic and unbiased atmosphere of educational institutions like colleges or departments of the university can provide a suitable base for operating such programmes. In view of the importance of the programme of adult education, the UGC has agreed to provide financial assistance for the purpose on a sharing basis of 75% (UGC) and 25% (university) upto a ceiling of 3 lakhs per university for the remaining period of the Fourth Plan. The Universities of Rajasthan and Baroda have good adult education departments.

If universities are able to provide continuing educational programmes tailored to the needs of the community, in times to come, they might develop into centres of new culture. As Dr Adisesiah pointed out "I have spoken of continuing life-long education as the centre of the new society, the heart or beat of new culture, the leaf, the blossom and the bole of a new world which development could bring if it were placed in the service of man".

8. *University Extension*

DR. SUSHILA MEHTA

IN India, as in many other countries the process of re-thinking about the functions of the university has been going on at different levels in the last few decades. The report of the Education Commission (1964-66) for the first time included a full fledged section on adult education and emphasised the need for forging dynamic links between the university and the community. As the country has been going through the planned processes of development through three Five Year Plans the report of Programme Evaluation Organisation of Planning Commission revealed that the results are not commensurate with what was expected. There are some planners and educationists who believe that the growth rate cannot come up to expectations unless and until more and better adult education is provided. Studying 1961 Census figures, Asoka Mitra (Census Commissioner) attempted to classify 324 districts of India under four different levels of socio-economic development with the help of 35 universally available indicators of development. According to this classification, he placed 81 districts at the fourth or top level of development, 76 in the next lower or the third level, 88 at a still lower

level or second level and 79 at the lowest, or the first level. He found positive co-relation between levels of development and literacy and education. Discussing these findings, Asoka Mitra says, "The most important and striking positive association was that between the highest levels of development and literacy and education. It was conclusively established that literacy and education is a concomitant factor of agricultural and industrial growth."

Awareness of the vital role of adult education in economic development does not mean that there is a general acceptance of the new roles of universities in adult education among the academic community. There are some scholars in India, as in many other countries, who strongly feel that it is not in principle an appropriate function of the university to take up programmes in adult education or community service. Some academics even caution that the standards of university teaching and research are already falling and they will deteriorate further if universities have to take up more work and additional responsibilities in the field of adult education. Some university teachers even foresee dangers that the universities and colleges may get too much involved in community affairs, university autonomy may be lost and the academic atmosphere of the university may suffer through interference of community leaders and politicians. Others doubt the expediency of using the time and resources of highly trained skills of university faculties for such activities as conducting adult literacy classes, while other problems of improving the standards of teaching are awaiting their urgent attention. Some argue that adult illiteracy would be wiped out in time to come if we fully implement the compulsory primary education directives, and the few illiterate old persons would die away in the course of a few years in any case.

At every stage of growth and expansion of university activities, arguments for and against such measures always arise, any addition of a new subject or a new method or a new field of training often invites resistance. Addition of such a challenging field as adult education is likely to involve adverse reaction. In time, if the universities have accepted new subjects and new areas for training, it does not follow that such a vast new function

with its built-in challenge will be easily accepted. However, it is natural to assume that persistent needs and demands of the community especially in a democracy are bound to have their impact sooner or later. The fact that a large number of universities in advanced countries have accepted their new functions in the wider community through various programmes of community service and community education is in itself an eloquent testimony to this aspect of university expansion.

In spite of the conscientious objectors and sceptics on the role of university in community education, many modern and progressive universities in Yugoslavia, U.S.A., U.K., U.S.S.R., Canada, Australia as in other countries have developed extension programmes in different areas of community service and adult education. For universities in India, their experience in this field is a subject of deep interest. While developing their own programmes of extension education according to the needs of Indian communities, the universities in India can get valuable ideas and suggestions from the experiences of these universities.

To Yugoslavia goes the credit of developing a unique type of university called Workers' University, which is mainly based on the industrial and economic needs of the communities it serves. Its size, the nature of its curriculum and the way it is organised depend on the economic, and industrial development in the area it caters to. There is no rigid pattern, each university works out a solution to meet the special needs of its area, although the underlying principles of the Workers' Universities are the same. The Workers' Universities shoulder the responsibility for the education and advancement of hundreds and thousands of workers not only in technical and vocational training but also in general and cultural development. Under one roof and one management, the integrated system of education provides general education for those adults who could not complete their school education, vocational training or re-training to fit the workers for the increasing complexities of modern industries and preparation—and this is indeed a revolution—for those who are or may become members of committees or other bodies elected to undertake work in the community and help all those whose lives can be enriched and made valuable to society through increase and expansion of general and cultural education.

By 1968, there were no less than 242 Workers' Universities functioning all over Yugoslavia. In large universities such as the one at Zagreb, about 10,000 workers, from some hundreds of enterprises go through the educational processes every year. The first task of the university is to study the needs of the students seeking training, second to draw up curricula and teaching materials, third to complete the courses and finally follow up and evaluate the results. In this process the universities develop a variety of methods to meet the wide range of educational problems presented to them by the enterprises and industries where the workers are employed. Zagreb Workers University has five centres: centres for electrical industry, metal industry, chemical food and textile industries, building industry and finally for goods turnover and catering.

At the university level, U.K. was the earliest to provide for adult education activities. Cambridge was the first university to create an extra mural organisation by setting up in 1873 a syndicate for local lectures. It was assumed that outside the university walls, there were persons capable of studying at university level and university methods of teaching were appropriate for them. By 1945, all but one of 17 English universities and university colleges had established departments of Extra-mural Studies. Some were called Departments of Adult Education and others as Departments of Adult Education and Extra mural Studies but the name Department of Extra mural studies is common. These departments provide liberal studies at the highest levels. There are various types of colleges providing short term or long term courses for adults. There were in 1968 about eight colleges (including Ruskin College at Oxford) which provided courses of one or two years' duration. Some of these courses lead to a diploma. There are some 30 colleges which provide short term courses. Many of them are maintained or aided by local educational authorities. Their courses range from a weekend to a fortnight. Birkbeck college, London, provides part time and evening courses for higher degrees of London University including Ph.D. in Arts and Sciences.

In U.S.A. the scope of adult education through universities or University Extension has been widening steadily from extra-

mural formal academic instruction through correspondence and class courses for the development of numerous informal activities and services. Speaking before the Third Annual Conference of National University Extension Association, Dr Moulton suggested that the word "Extension" in American Universities is understood in three different ways (a) "The extension of the university to the whole country and to all men and women in it, (b) The extension of university education through the whole period of a man's life, and (c) The extension of what a university stands for to all the vital interests of life." Thus the place of university extension in the universities is of vital significance. A vast variety of extension programmes are offered by universities in different fields of instruction and services.

In 1968 technical courses and service programmes in health professions enrolled almost one million persons. Other technical courses, many of them on the job programmes accounted for another 1.5 million participants. Business and management courses enrolled about 1.2 million. Distributive services, salesmanship and office skills training involved roughly 2.3 million, continuing education in the professions numbered over 800,000. Auto-mechanics, teacher-training and personal services are other categories of vocational programmes. Despite a wide range of vocational courses there are many other adult education programmes purely for recreation and hobby oriented learning. Nearly 5.5 million persons found time for bridge lessons, dancing instruction, music and art appreciation and other hobbies and recreation oriented learning.

The entire American formal educational system and especially higher education is deeply involved in adult education programme; some 50 universities operate correspondence study programmes. Community development divisions have been in existence for many years in some State universities. Community education in urban institutions is being supported by new federal grants. Many universities provide degree programmes especially designed for adult part time students and conducted largely through independent study and summer residential seminars and evening classes. In 1962, roughly some 17 million adults were

engaged in part time systematic learning experiences* In U S A adult education is largely vocational education The annual enrolment under University Extension Service of any one university goes up to 20 000 or more Besides millions of people are enrolled for correspondence courses every year

After the October 1917 Revolution, the need for adult education was keenly felt in the U S S R The various kinds of training in the vocational skills of the workers were given the most important place in the adult education In 1968 after enacting, "The law on establishing closer links between school and life and on the further development of public education," many vocational and technical schools were established for developing the occupational proficiencies of the workers Evening schools or shift schools are designed for employed persons who are not able to complete their secondary education More than two million people attend evening schools while they work in day time Besides full time institutions of higher education, there are a large number of correspondence courses offered by various institutions There are 19 institutions of higher education in the U S S R operating correspondence departments under full time institutions, 55 correspondence technical schools and a large number of correspondence departments in full time technical schools The All Soviet Correspondence Polytechnical Institute alone has about 32,000 students† The number of students taking evening and correspondence courses in institutions of higher education reached the one million mark by 1960 The correspondence higher schools have consultation centres in different towns and enterprises, where students can attend lectures, do laboratory work, receive competent advice and pass their examinations

In the last few decades almost all universities in Canada have realised the value of developing extension education programme of one kind or another This is particularly true of the universities supported by public funds In recent years universities have started accepting the obligations that they should share the rich store of new knowledge and technology with the surrounding

* Roger De Crow *Adult Education in United States*

† M I Kondakov *Education in U.S.S.R*

communities for mutual benefits on both sides. In pursuance of this view, extension education programmes of different universities cater to the needs and problems of the communities they serve. Some universities like Queen's developed a large number of correspondence courses. Universities like Saskatchewan and Alberta have large programmes in agricultural extension. Universities situated in industrial centres like McGill (in Montreal) and Toronto offer a number of evening courses in various subjects. McGill University also developed travelling library services. McGill has thus set a pattern for similar library services developed by other universities and departments of education. The departments of extension of certain universities like McMaster and Western Ontario conduct summer schools or provide courses as integral part of summer schools through courses conducted in the evening or in summer. These universities provide opportunities for adults to obtain academic degrees and certificates. St. Francis Xavier College—a small institution in an out of the way corner of Nova Scotia founded 100 small study-groups of fishermen, farmers and miners and started a number of projects for helping them in their economic rehabilitation. The people in these communities were poor and ignorant. The study groups were prepared for action through reading, thinking and planning together. Members of communities cooperated to solve their economic problems. From a small beginning many achieved remarkable results. More than economic benefits, the intangible results can be seen in peoples' changed attitudes. The spirit of defeatism which was there among the people due to their suffering of centuries of poverty disappeared, yielding place to a new confidence in education and new knowledge and techniques. In the past two decades St. Xavier College has become famous as a sort of Mecca for students of the philosophy and methods of adult education in North America.

In Australia six universities have developed imaginative and varied types of programmes through the departments of adult education. At the University of Sydney, Department of Adult Education, the emphasis is on non vocational and liberal education courses. It also brings out a very successful fortnightly discussion pamphlet, viz., *Current Affairs Bulletin*. On the other hand, at the University of New South Wales, the courses are

vocationally oriented. The programme is principally provided through a radio-station controlled and directed by the Department of Postgraduate and Extension Studies. The University of New England which is situated at a rural centre, provides adult education programmes to scattered rural population through its Department of University Extension. The Department has not depended on traditional weekly classes but its approach is experimental and it offers great variety in its courses. It has developed residential short-term courses, the regional short-term schools and autonomous study groups. The University of Queensland has a committee for public lectures which organises lectures in Brisbane and other towns. The University of Adelaide offers a large number of classes for adult education and a large number of short term adult education schools. The University of Queensland Institute of Modern Languages has developed 47 different courses for languages. The universities in Australia provide substantial courses in a variety of subjects for about 40,000 students.

In Bulgaria, concerted efforts in the field of popular education have produced striking results. For popular education reflects the age-old wisdom and experience of the Bulgarian people. "He who can read has acquired two pairs of eyes. But he who cannot read is like a log"—says an old Bulgarian proverb which also reveals the remarkable striving of Bulgarian people for knowledge, enlightenment and education. Extensive system of evening schools, correspondence courses and evening universities have served the Bulgarians so well that illiteracy among adults up to the age of 50 has been completely wiped out. The liquidation of illiteracy in Bulgaria enabled the masses to take active part in socio-political life of the country and improve their intellectual and aesthetic standards year after year. There are a number of innovations in their programmes. Besides the correspondence courses, there are community consultation and residential schools and autonomous study groups. Courses are offered in a wide variety of subjects ranging from "Effect of drought on the economy" to "International relations" and "Modern poetry". Their evaluation reports reveal that the participants fully appreciate the courses offered and there is a growing demand for more adult education programmes.

A critical study of adult education programmes, as they develop in different countries, reveals that adult education can serve various useful purposes. According to Professor W C Hallendbeck of Teachers' College, Columbia University, adult education has three groups of purposes—firstly, adult education provides for development of vocational skills, many people today aspire for better jobs and more income which have to be acquired through improvement of vocational skills and better professional adjustments, secondly, adult education responds to the personality needs of adults for communion with other people who are interested in the same things. Through wider knowledge adult education helps in development of personality or in acquiring hobbies and avocations. Lastly, adult education or community education prepares adults for community action. Individuals in a modern democracy know that a citizen alone does not wield much influence on conditions of his own life and work. Only through group action can something be accomplished or solutions found for community problems. These responsibilities of citizenship are fulfilled through co-operative activities of groups of citizens.

In a developing country like India where a large number of adults have to change their vocations from handicrafts to new technology and many vocational groups have to change their occupations due to changing modes of production, vocational education of workers has to fill in urgently felt needs of groups and individuals to develop their vocational skills in new techniques and methods. The President of India while delivering the Convocation Address to Bombay University in 1967, emphasised that the universities have to add to their traditional responsibility of teaching, research and training for leadership two more responsibilities viz., adult education and community service. Some of the progressive universities have already realised that they cannot function as little islands of teaching and learning in the midst of vast areas of illiteracy and ignorance. The University of Rajasthan has a full fledged Adult Education department and has got a postgraduate diploma programme in adult education—the first of its kind in India.

In the last decade quite a number of universities have started extension lectures, or extra mural educational activities. Universities of Mysore, Poona, Bombay and Rajasthan are in the forefront

in this field. The University of Delhi took a lead in the field of extension lectures by establishing in 1957, the Delhi University Extension Lectures Board with the Vice-Chancellor as its Chairman. Series of 15 to 20 lectures in different fields of knowledge are organised with a view to establish closer contacts between the community and the university for their mutual benefit and to bring the latest knowledge to ordinary citizens. The University of Delhi has since 1962 a flourishing Department of Correspondence Courses and Continuing Education. Other universities like Punjab, Rajasthan, Himachal, Mysore and Meerut have also started correspondence courses for the adults who are employed during the day time.

The term 'Continuing Education' is gaining currency in usage particularly as a new dimension of the role of the university. For continuing education is a recent development in the field of higher education in India. A number of Summer Institutes, Summer Schools and Summer Courses organised by various universities attract professionals to learn about new developments in their fields. Large number of seminars and workshops held by departments of universities and other institutes of higher learning also serve the purpose of bringing scholars and experts together for exchange of information and ideas. Discussion of problems in their fields of endeavour stimulates intellectual activities and their awareness of new trends and developments in their chosen professions.

In India which is in the process of rapid industrial development, workers' education assumes special significance. It is rapidly becoming an important aspect of adult education. The need is further intensified by the fact that the demand for skilled workers is increasing day by day as new industries and projects are taken up in expanding Indian economy. It is estimated that by 1975-76, there will be a four fold rise in the number of industrial workers alone. Education for such a large labour force is essential to enable them to be efficient in production, to have mobility in their occupations both horizontally and vertically and to help them in adjustment in changing conditions.

The term 'Workers' Education' is understood differently in different countries. In USA workers' education is thought to

be very near to trade union education. In U.K. where the programme has been in existence for decades, it is considered to be a form of adult education for workers. On the other hand in Scandinavian countries, workers' education includes within its scope programmes of social, economic and general liberal education.

In the special context and background of *Indian conditions*, workers' education has to be geared to the needs of developing industries. As the country is rapidly moving towards urbanisation, most of the industrial workers in the big cities come from rural areas where they still continue to have firm roots. Problems of adjustment to city life arise due to lack of housing facilities, fast tempo of life and rigidly disciplined atmosphere of their places of work. Workers' education, therefore, has to follow an integrated approach. The aim of workers' education is that the programme should help the worker to become a better producer, a better participant in programmes of national development and an enlightened citizen, a rational individual and a good trade unionist. The programme, therefore, will have to combine the imparting of professional or occupational skills and aspects of liberal education aimed at developing the personality of the worker. In a very large number of cases, general education has to begin with literacy.

The Central Board of Workers' Education set up by the Union Government in 1950 has established about 22 regional centres. The workers' education provided by the Board is based on a three-tier system. The Board recruits education officers who are given orientation for workers' education. Officers located at various regional workers' education centres organise training of worker-teachers who are drawn from various industries. The worker-teachers go back to their industries and organise classes for other workers on the premises of the factory.

Universities have yet to go in a big way to provide for workers' education in India. A few workers' colleges organise programmes for employed persons in the morning or evening in some universities.

Agricultural extension

In recent years a number of new universities are being established especially for agricultural development and research. By 1972 nearly every State in India will have established its own agricultural university. From the beginning, the agricultural universities have laid great emphasis on extension education and other adult education activities. The Indian Agricultural Research Institute at Delhi has a flourishing department of extension. Many of the departments of extension of these universities adopt one or more development blocks for intensive extension activities. In the surrounding rural communities, they organise demonstrations for the use of new farm implements, farm machinery, use of fertilisers, etc. They organise training of short duration for local farmers for introducing new crops like vegetables, fruits, horticulture, bee keeping, poultry, etc. Through group discussion and demonstrations, they popularise new seeds and new methods for higher production of crops. They help the farmers in protecting crops and control of pests and diseases. For women, some Agricultural universities organise short term training in fruit preservation methods, applied nutrition, domestic science, kitchen garden, poultry keeping, bee keeping and plant protection measures for fruits and vegetables.

Many of the Agricultural universities weave their adult education programmes through the cultural life of the rural communities. They generally celebrate a large number of local festivals. Every year they celebrate farmers' day when they hold practical demonstrations for sowing the latest variety of new seeds. On certain festivals, universities organise "Kisan Mela" or "Farmers' Fair" in which farmers of surrounding villages are invited and progressive farmers are encouraged to bring their fruits, vegetables etc. Exhibitions of better varieties of seeds, fruits, vegetables etc. are organised. Competitions for farm cattle are also held and prizes distributed. New methods and techniques in farming are taught through various media of communication. These Kisan Melas are popular in rural communities as they coincide with their own cultural festivities and activities.

Considering the importance of agriculture as the occupation of the largest number of people in India, the adult education

and higher education facilities provided so far in the field of agriculture, may be deemed quite inadequate. However, in a certain sense, extension education in agriculture has already started playing a significant role in improvement and development of better agricultural practices in the country. To a certain extent universities have been able to popularise new varieties of seeds, use of fertilisers and new methods of plant protection. Though the universities are not wholly responsible for what is called "Green Revolution" which is sweeping the country since 1968-69, they have made a significant contribution towards these new developments in increasing agricultural production. Adult education would acquire a new significance if more extension education is provided and programmes are geared to the needs and problems of the large number of rural communities scattered throughout the length and breadth of this sub-continent.

To any critical student of university adult education in India, it would be clear that the universities in India have not even touched the fringe of the vast areas of adult education. Out of the 74 universities in the country, only three have regular departments of adult education. A few more organise extension lectures for adults. Even in 1971 for a majority of the universities, adult education is not anywhere in their programmes of development and expansion. Even the very few universities where departments of adult education have been established are not able to motivate adults to join their programmes in a big way. Except for the correspondence courses, other adult education programmes are facing many problems, one the most important being the participation of adults in big numbers. Motivating illiterate rural masses to join literacy classes and other adult education activities have posed difficult challenges to adults' education in India. The most difficult task here is to develop programmes and courses which would satisfy the needs and demands of surrounding communities. For the vast illiterate rural masses who feel confused and insecure in today's complex and changing world, the question is to convince them about the functional utility of adult education programmes in solving some of their basic problems.

While adult education and extension education face a number of challenging problems, there are very few institutions with

competence to conduct problem oriented research to find solutions to different situations. At State and district levels, universities are the only competent bodies to take up problem oriented research in different areas and find some solutions to questions like (1) motivating rural adults for learning how to read and write, (2) finding functional links between academic symbols of reading and writing and the day-to-day life of rural communities, (3) experimenting with new methods and media for adult education, (4) preparing purposeful literature and materials like posters, flash-cards, pamphlets, film strips etc for neo literates. The need is to change completely and lift adult education from its outmoded practices to a new level of functional programmes for many vocational groups and communities. In many of these fields, universities are competent to make creative contribution. Universities have yet to go in a big way to provide large programmes of functional utility to the rural masses of India.

9. College and the Community

DR SUSILA MEHTA

WITH the installation of elected representatives in the ministries of different States of India higher education is going through a boom period of development. Many new colleges for arts and sciences have been established in cities, small towns and even in mofussil areas. However, as higher education is expanding and covering many and larger sections of society and especially those sections which hitherto were denied this benefit new problems like deteriorating standards, student unrest and unemployment of the educated pose grave threats to further development. It is being increasingly realised by teachers and educational authorities that colleges cannot function properly as little islands of institutional knowledge in the midst of a vast ocean of adult illiteracy and of mass ignorance rampant in rural areas. It is in their own interest that colleges have to establish meaningful contacts with the surrounding community otherwise an atmosphere of unreality is likely to dominate their educational activities. Unless the college develops a deep awareness of the aspirations of the people and problems of the surrounding communities, the content of knowledge and information it imparts

would be completely out-of-date. Endorsing this line of thinking, the Kothari Commission (1964-66) suggested active involvement of college students in some form of social or national service. "We recommend", says the Commission, "that some form of social and national service should be made obligatory for all students and should form an integral part of education at all stages" *.

The idea is to provide a corrective to the class room teaching based on text-books and rote-learning. As visualised by the educationists, if the broad objective of education is building up a strong character of the growing generation, the process cannot be entirely carried out by class-room lessons. It has to be supplemented, among other programmes, with the constructive activities of social and national service. If the students go and work in the community, they come face to face with realities of poverty and ignorance. As they observe and study the conditions of weaker sections of society, their conscience is aroused against ignorance, poverty and exploitation. The Education Commission visualised the national service scheme as an educative process in various different ways. "This can become," says the Commission, "an instrument to build character, improve discipline, inculcate faith in the dignity of manual labour and develop a sense of social responsibility" †.

Linking of educational activities to community needs

It is clear that a vital and yet delicate task in the National and Social Service Scheme is to find significant links between the educational needs of growing students on the one hand and the socio-cultural needs of the community on the other. This vital process of organically uniting the growth-needs of student—personality to the socio-economic needs of the community is a matter requiring much study and deep understanding. The students have their vast potentialities of growth in their interests, aptitudes, skills and intellect. These can experience growth through opportunities to use them for some activities in the area of certain community needs. The community on its part has many unfulfilled needs for education including adult literacy, health education,

* Education Commission Report (1964-66) p. 11

† Ibid., p. 11

environmental sanitation healthy recreation etc To combine the two sets of needs in an integrated process of continuous development would require close co-operation of community leaders and college teachers, with students as the pivot of the entire process If the students get an opportunity to exercise their skills for some felt-needs of the community, they would feel a sense of satisfaction and achievement The method is not entirely untried in India A few good colleges provide examples of organising activity projects like planting trees, building of roads, repairing drains and other constructive activities However, four aspects of these activities always posed difficult problems for teachers, viz: (1) how to assess community needs, (2) how to organise the entire programme as an educational experience for students (3) how to integrate the activities in the curriculum systematically so as to make it a regular part of educational experience, and (4) how to evaluate the work of each member of the team so as to help the students to discover their talents and skills and areas of further development

Community survey

✓ To get preliminary ideas about the social and economic life of the rural communities, scanning of existing literature on rural sociology and village studies of the region, reports of various organisations including the census reports, economic inquiry committee's reports and such other literature and material—published or unpublished—might provide useful clues For getting some ideas about the current problems of the surrounding community, several field visits to the village would be necessary A good source of collecting useful information might be found among the community leaders Information discussion with community leaders would provide the much needed data For a thorough assessment of community needs and problems, sociologists suggest such socio-economic or educational surveys of the community

✓ Surveys are conducted by many agencies to find out facts and figures about a certain area of life and activities in a particular community One may study the size of the family and living standards or land holding patterns or the extent of illiteracy and the

list can be extended indefinitely. However, surveys become useful instruments of programme-planning, if they are conducted after clearly defining the specific purpose of the study and the type of information and data which is required for the programme development. For this purpose, it is necessary to delimit a certain area of community needs for which the social service programme is to be taken up. For example in Gujarat, surveys were conducted in several villages for planning a programme of improvement in agriculture and handicrafts. A house-to-house survey was conducted by teachers with the help of village leaders in well formulated data-collection schedules. In many villages in Maharashtra on the other hand, surveys were conducted to find out the extent of illiteracy among a certain age group of rural adults, their leisure hours, their desire to learn, their general knowledge etc. Some of the surveys are reported to have created greater community awareness of their needs and problems. When the information is collected and data analysed and tabulated and a report prepared, it provides a solid basis of facts and figures on which a programme may be planned. It would also start a process of thinking and discussion and taking some realistic decisions to initiate a development programme. In this way a survey would serve a number of purposes in helping to develop a dynamic approach to problems, awareness of needs, systematic planning for pooling resources and effective programmes of service. The technique of community survey lies not only in collection of accurate information and data which is an important part of the process, but also in activating the minds of students, teachers and community leaders to think in realistic terms and prepare their minds for community action. When the students go from house to house for the survey, they come face to face with realities of life, meet rural adults and observe their living conditions and discuss their problems and get an insight into their needs.

Need for community education

An important area of community needs is highlighted in many surveys as well as in successive Census reports. This is the area of community need for education and especially literacy programmes for adults. For it is reported by many agencies as also by successive Census reports that after two decades of independence

the extent of illiteracy in the country as a whole is high and it is higher in certain areas and among certain sections of society

The magnitude of illiteracy is higher in rural areas as compared to urban areas, it is also higher among women as compared to men. When the provisional figures of 1971 Census were published what gave a shock to many thinking Indians was the vast extent of illiteracy in the country as a whole. It seems that in spite of all the efforts of various organisations since 1961 there has been only a nominal rise in literacy percentage of the total population. The overall literacy rates have increased from 24.05 per cent in 1961 to only 29.35 per cent in 1971. In practical terms what it means is that out of every hundred persons in India as many as 70 are illiterate. Over the years we have been moving at the slow speed of a tortoise in our efforts to wipe out illiteracy. In the decade from 1951 to 1961 literacy percentage increased from 16.6 to 24.05. This gives us an increase of 7.4 per cent whereas population increased from 35.7 crores to 43.9 crores giving us an increase of 21.9 per cent. What it amounts to is that the number of illiterate persons in the country had actually increased in spite of increase in the literacy percentage. The Education Commission (1964-66) made a pointed reference to the fact that 'India was more illiterate in 1961 than 1951 with an addition of 36 million illiterate adults. The same holds true about 1971 literacy figures.

Disparity

Another disconcerting aspect of the extent of illiteracy is that in spite of the overall literacy percentage of 29.35 in 1971 a wide disparity exists between the literacy percentage among different sections of the society. Literacy among women is much lower as compared to literacy among men. In 1971 the literacy rate among men is 39.49 per cent and among women it is not even half it is only 18.47 per cent. In 1961 while literacy among men was 34.4 per cent, literacy among women was only 12.8 per cent. During the decade 1951-1961 the percentage of literacy among men increased from 24.9 to 34.4 but among women the percentage increase was only from 7.9 to 12.8. Similarly disparity exists between literacy rates of rural and urban population.

From 1951 to 1961 while literacy percentage increased from 34.6 to 41 in urban areas, it increased only from 12.1 to 19 in rural areas. State wise figures also show considerable variation in percentages of literacy in different States and Union territories. Six States and three Union territories have remained far below the national average of 24 per cent in 1961. A further analysis of Census figures indicates that the higher the age group, the larger is the extent of illiteracy. The percentage of illiteracy in the age group of 10-14 was 57.7, in age group 15-19 it was 61.6, in the age group of 20-24 it was 66.4, in the age group 25-44 it was 72.8, in the age group 45-59 it was 78.2 and in the age group 60 and above it was 83.3.

Many politicians, administrators, planners and educationists have been shocked by these figures. Even after completion of three Five Year Plans for national development, our progress in literacy can be described as hopelessly inadequate. At this rate of progress our estimates show that the percentage of male literacy in the country may rise from 39.49 in 1971 to 49 in 1981. There seems to be no hope of achieving cent per cent literacy in the foreseeable future unless the problem is tackled on a war footing.

Adult literacy work as a social service project

Our rough estimates have given 150 million adults in the age group of 15-44 as illiterate. The task of making them literate is stupendous in terms of manpower and financial resources. Some educationists and planners advocate unorthodox methods for tackling such a gigantic problem of mass illiteracy on a nation wide scale. They quote the example of some other countries and especially Soviet Russia where the problem was tackled on a nation wide scale. They suggest that the universities and colleges are well suited to play an important role in mobilising resources of educated people—the students, the teachers and others in this national task of eradication of illiteracy. Unless this fundamental responsibility is recognised, accepted and implemented by educational institutions, there is no hope of eradication of illiteracy in the near future.

If the college finds that adult literacy is the need of the surrounding community, it may take up the work as a

social service project. If the college is situated in a rural area it may like to adopt a nearby village or a group of villages for this work and plan a rural community education project. If the college is situated in an urban area, it may adopt a nearby slum area for this work and develop an urban community education project. In any case a good rapport has to be established with the community. The college teacher may like to establish *liaison* with the community through its local leaders or other respectable members. Once the village leaders are convinced about the utility and importance of the community education project their cooperation and the participation of entire community would be forthcoming gradually.

Organisation

A good organisation is essential for activity projects. In some universities, Advisory Committees have already been set up under the Chairmanship of the Vice-Chancellor for the National Service Projects. What is needed is a band of enthusiastic workers who have keen interest in the activity projects. When the Committee sends out a circular to the affiliated colleges for the various activity projects to be taken up in the coming years, it may be useful to give some details about the various aspects of the activities. For example, if it is the adult literacy project to be taken up in a neighbouring village, it would involve a number of activities viz., (1) Survey of the village, (2) Motivating rural adults for learning how to read and write, (3) Enrolment drives, (4) Training of students for teaching adults, (5) Starting of classes, (6) Teaching the first lesson/book, (7) Conducting tests, and (8) Post literacy work, etc.

✓ At the college level two committees would be needed for the project. The first committee would be a sort of Coordination Committee which would include community leaders or Panchayat members from the concerned community, some staff members of the college and representatives of students who have opted for the project. It would prepare a list of illiterates of a certain age-group in the adopted community. It would locate a suitable place for holding literacy classes, it would see that necessary equipment is procured in proper time, it would select a literacy

method and primer, it would work out time-schedules for the different phases of the project and act as a coordinating body. The Committee should get the services of an experienced senior staff member to act as secretary or convenor in order to see that action is initiated in time and proper coordination is ensured and records and reports are properly maintained.

The second committee which may be called Students' Social Service League would take up the work of detailed programme-planning of the various activities. It may work out the time-schedules for batches of students who are assigned duties and spell out their work in full details. The staff members of the college may help and guide the students in programme-planning. However, the initiative and main efforts would rest with the students.

Programme planning

An effective process of programme planning holds the key to securing enthusiastic response of the students on the one hand and developing participation of the community on the other. If the process of programme planning is taken up as a dull routine, it would lose half of the educational value of the service project. It is, therefore, desirable that programme planning should develop a process of creative thinking and discussion among the students who would try to find solutions to various practical problems and develop a team spirit through collective thinking, group planning and group action. There is no scope here for imposed ideas or fixed targets. The programme has to develop out of the collective effort. In the words of University Education Commission (1948-49) the colleges should function not merely as 'class rooms or hostels', but as living communities where the students will get "opportunities for practice of democratic ways of life".

The various phases of the programme have to be fully discussed. The time schedules for (1) Initial survey of the educational needs of the community, (2) Motivating adults for joining

classes, (3) Enrolment drives, (4) Orientation of students in adult literacy methods, (5) Starting of classes, (6) Teaching first lessons, (7) Completing the first book, (8) Giving tests, (9) Final evaluation may be worked out after discussion. Batches of students may be assigned to different activities. Their names and the time they have to devote and preparations they have to make may be worked out in details. According to the National Service Scheme a student may devote a minimum of 120 hours of work for this programme. There cannot be any rigidity in an activity project. However, certain standards of work should be maintained. In fixing time for adult literacy classes the leisure hours of the adult illiterates should be kept in view. Some students may devote a number of hours for conducting initial surveys or motivational campaigns or enrolment drives. Others might devote an hour or two every day teaching in adult literacy classes. Others might prepare some written material or audio-visual aids for the classes. Still others may visit the family of illiterate adults and ensure that they attend the classes regularly. Some may help the student-teachers in the class to present material and conduct classes.

Teaching adults

Through a well planned campaign, once the adults are enrolled for literacy classes the next step is to fix up the location where the classes would meet and the days and time of teaching adults. All these would need consultation with the adults who are to attend the classes. Convenient timing and place for the classes is essential if regular attendance of the adults is to be ensured. The next essential step is to organise a short training course for student-teachers in adult literacy methods. There are a number of adult-literacy methods used by various organisations in the country. To study some of the important adult literacy methods and select and find one suitable for the particular group for which the class is organised, keeping in view the time and material available would require some thinking and considerable efforts on the part of the Co-ordination Committee as well as the Students' Social Service League. A short orientation-training in adult-literacy methods for students can be taken up by the college staff with the help of State education department or any other organisation working in the field of adult education in the area.

It is also essential for the coordination Committee to procure adequate copies of the primers or the readers or the first books for adult literacy and get the manuals for teaching adults and other required literature and material for adult-literacy classes much in advance, so as to allow student-teachers to study from and learn how to use them in the class

When actual class room lessons are started, the students who might not have taught before would feel somewhat diffident. In the first few lessons the staff-members might do well to demonstrate and otherwise help and initiate the work. Through experience it has been found that teaching adults is an exacting task in which constant encouragement, help and useful suggestions by staff-members would be desirable. Students might like to go in batches of two or three and take turns in the class for teaching adults. There is also a danger that adult-classes might degenerate into monotonous routine and alienate the students. Constant feed-back through new ideas, suggestions, booklets, pamphlets and simple audio-visual aids would be required to keep up the interest of the students and teachers. The creative process of teaching should be emphasised and student teachers encouraged if they are allowed to use their own ideas to evolve new techniques or materials for teaching adults.

Evaluation

Another challenging task for the Coordination Committee as well as the Students' Social Service League is to work out systematic criteria to evaluate the social service activities. Evaluation of an activity project and especially social service project is not the same as giving tests of reading and writing to the adults made literate. Much more is involved in the evaluation of the various processes besides testing of skills of reading and writing acquired by the adults. The process would require three different sets of criteria of evaluation for three different aspects of the project, viz., (1) Evaluation of the skills of reading and writing acquired by adults made literate in the programme, (2) Evaluation of the work of the students in respect of the time they devoted, the efforts they made and number of lessons taught and participation they invoked, (3) Evaluation of the programme as a whole.

in respect of planning coordination, development and achievement. In respect of the first aspect of the evaluation of the skills or reading and writing of the adults made literate it would not be difficult to devise simple tests. However, it is usually found that adults who join literacy classes are often reluctant to take tests. In such a situation, on the spot tests without previous intimation might help to solve the difficulty.

If the social service project is to form a regular part of the curriculum in the educational activities of the college, much thought should be given to the question of evaluation of the work of the students. Besides, developing suitable criteria of allotting marks for the various activities undertaken by the students, the necessary records, registers and diaries will have to be maintained regularly. Besides the amount of time devoted to these activities, the number of lessons taught and number of adults made literate, the questions of interests and solutions of other problems would also call for significant criteria of evaluation. Considering the heavy odds against which adult literacy activities have to be carried out, the work of the students needs to be evaluated in the light of local problems they have to face during the programme. The amount of enthusiasm they evince in the preparation of lessons, audio-visual aids and amount of participation they secure from illiterate adults would form good criteria for assessing their efforts. During these activities if the students show aptitudes for teaching or creative ideas for preparing teaching material, these should be detected early and allowed to develop. Evaluation of entire project for adult literacy work is to be undertaken not to find out defects, short-comings or failures. Evaluation here is to be used as a constructive process to channelise the students' activities into more fruitful and worthwhile endeavours. A constructive method of evaluation would maximise the positive aspects, eliminate wastage, secure better coordination of efforts, generate greater enthusiasm and greater participation of students, and illiterate adults. Evaluation would help in systematic planning and emphasise the education values of group thinking, group planning and a team spirit in implementing the programme. The full implementation of the plan as worked out would be emphasised at every stage. Finally, evaluation also helps in liberating the creative energies of students in teaching to

preparing material and writing up lessons as in preparing inexpensive small audio-visual aids for teaching. The report of tests along with the material produced by students would also help in the final evaluation of students

As the college staff and students gain experience in preparing and implementing activity projects, social service activities would become an integral part of the educational process. It would provide a corrective to class-room teaching and rote learning. Students would enjoy working out a plan collectively and implementing the plan on the field. By taking up the responsibilities for executing small units of the project, they might also develop a sense of social responsibility. While working in different activity projects, if they can discover their latent interests and aptitudes, they can also suitably plan their future careers.

10. Problems of Affiliated Colleges

DR. G.S. MANSUKHANI

IN order to meet the student explosion, many mushroom and sub-standard colleges have come into existence during the last few years. Some time it so happens that political leaders and social workers of a region get together and press the university to permit them to start a college in their area. In spite of the prescribed conditions of affiliation it has been seen that in practice the sponsors of the college promise to fulfil all the conditions at the time of the grant of affiliation but seldom do so in spite of the lapse of a number of years. Affiliation is a privilege which has to be continuously earned and deserved. Moreover, the conditions laid down by the university at the time of grant of affiliation are the minimum requirements. These relate to the provision of the physical facilities like classrooms, library, laboratories, residential accommodation, academic facilities like qualified teaching staff, administrative set up (governing body), financial arrangements (reserve fund and endowment fund) to ensure its normal working. The unplanned growth of colleges on extra-academic considerations and without proper facilities and

sometimes in out-of-the way places isolated from intellectual environment can only lead to the lowering of standards. It is, therefore, necessary that the university should appoint inspection committees from time to time to see that the conditions of affiliation are satisfied and academic standards maintained. A good institution will always endeavour to provide more amenities and better standards of instruction than the minimum required.

Financial needs

† The total number of affiliated colleges teaching up to the degree standard in 1970-71 was 3604*. Unfortunately the financial resources of many of them are very slender and as such their development is greatly inhibited. The grant-in-aid rules vary from State to State. In certain States (for example Mysore) the affiliated colleges are allowed to charge higher fees as compared to the standard fee in order to meet the deficit. The colleges in Delhi are in a happy position as 95% of the deficit is paid to them by the UGC. It may be noted that in 1970-71 while the Delhi colleges got 232 lakhs, the remaining colleges in India got a total of 740 lakhs from the UGC. In order to see that the States give reasonably adequate grants to the colleges, it is suggested that a "collegiate grant committee" may be set-up by the State Government to lay down grant-in-aid rules and to revise them every five years. The UGC committee on colleges recommended that the expenditure on development projects be shared by the States to the extent of 2/3, while the remaining 1/3 may be met by the college. In case of women's colleges, the State share should be 3/4 of the total expenditure†.

But for the financial assistance of the UGC, many of the colleges would not have either survived or developed. Through its three-lakh scheme, the UGC offers assistance to colleges for construction of classrooms, libraries, laboratories, hostels, science workshops, tubewells and other amenities. There is a special scheme for assistance of 1½ lakhs to postgraduate colleges teaching humanities and social sciences. For science subjects the

* See statistical appendices at the end.

† UGC Report of the Committee on Colleges (1967), p. 18.

assistance is on a more liberal scale. So far over 900 colleges have been assisted under the three-lakh scheme.

Under the College Science Improvement Programme (COSIP) the Commission gives assistance to selected colleges for better methods of instruction, workshop facilities, laboratory equipment, demonstration apparatus and special training programme for gifted science students. So far 73 colleges have been covered under the COSIP scheme.

There are special grants for teachers training colleges under the Fourth Plan development programme. Colleges teaching B Ed and M Ed courses can get 2 and 3 lakhs respectively on the usual sharing basis. The assistance for preparation of teaching aids, reading materials and experimental works is on a cent-per-cent basis. So far nearly 50 teachers training colleges have availed themselves of the above assistance.

It has been seen that some colleges which are short of funds adopt under-hand practices for collection of money. Their levies take the form of capitation fees or donations from students at the time of admission to different courses. It is an open secret that many engineering and medical colleges charge high capitation fees or donations at the time of enrolment. Some institutions even insist on donations from teachers at the time of appointment or confirmation. Such practices could be prevented by adequate grants to meet a major portion of the deficit of the institutions.

Language problem

Another problem which is peculiar to the colleges specially in rural areas is the language problem which stands in the way of their showing good results. Though many of the universities have switched over to the medium of the regional languages, English has been retained as a subject of study at the graduate level. The students have raised objection to the retention of English as a compulsory subject because English is very superficially studied at the school stage. The study of English is necessary only as a library language and for the understanding of background material. The study of English literature for an Arts degree is neither necessary nor useful. All that is required at the college

level is that the students should be able to read and understand books in the English language. If this aspect of the language, namely the *comprehension of English*, is recognised as functional, much of the fear of English would disappear. This means that the syllabus in English at the college level has to be changed so that the emphasis shifts from the ability of writing to comprehension.

Another pervasive evil in the affiliated colleges is the emphasis on lectures rather than on other methods of teaching. Many of the students find the lectures uninspiring and dull. Would it not be better if the synopses of lectures are cyclostyled in advance for circulation amongst the students? Only topics which are difficult and which require thorough discussion may be taken up in the classroom by the teacher. Certain parts of the course could be covered by self-study and written work, which could be facilitated by a discussion of specific difficulties. Let the teacher provide reading lists indicating the topics which the students are expected to cover on their own. It has been felt that at least one-third of the total teaching time could be used for written assignments and group discussions. If the number of lectures is reduced, the time saved can be used for tutorials. The teachers definitely need to be oriented in the latest theory and practice of modern communication particularly among groups separated by social, economic and educational barriers. In addition audio-visual aids and other modern techniques may be used to supplement theoretical instruction. Perhaps a number of colleges in a particular locality could collaborate in providing audio-visual aids, film strips etc. for the purpose of better instruction.

Handicaps

Let us see what happens to the fresher as he enters his college career. The newly admitted student has to face problems of adjustment to the changed environment, but instead of helping him to overcome his difficulties, his fellows students subject him to ragging in the first instance. Then comes the excitement of Union elections—the wall posters, the hand bills, the candidates' tea parties in the canteen and the shouting of slogans and finally the ballot box. Studies begin after the din of elections is over.

A sizeable number of students comes from rural areas. The rural student feels lost because his knowledge of English—the medium of instruction at the college stage—is very poor. “He cannot read rapidly, he cannot speak fluently, he writes painfully”*. Moreover, his poverty is another handicap, he is unable to pay fees in time or buy textbooks. The miserable quality of food served in hostels—a survey revealed that nearly 40% of the students of Calcutta University were malnourished†—the overcrowded libraries, the lack of sports amenities and inexpensive entertainment increase his frustration. But somehow, he must bide his time. If he can give vent to his pent up feelings and despair in some kind of protest or demonstration, he will go the whole hog. Any pretext will do to go on a strike, engage in scuffles with the police and damage the college furniture and burn public buses. The professional student politician—the eternal student—has something, or the other to stir up discontent, clamour and excitation. The college campus is unquiet in spite of Discipline Committee and Proctorial Board and the long arm of the law. Altbach pinpoints the root of the malady. “A mind which cannot attach itself to intellectual objects, a spirit which resents the burden of familial discipline and resists incorporation into modern impersonal adult institutions—what direction can it take except rebellion: blind causeless rebellion”‡ 1320

The class room atmosphere is hardly conducive to academic attainment. The teacher equipped with the minimum qualifications delivers lectures indifferently. Some of the boys get their attendance through proxy answers to the roll-call. In between are sandwiched some cultural functions and extra curricular activities. Games and sports are generally neglected because most of the students want to get back to their homes. The ordeal of the final examination accelerates the tempo of studies, spotting of likely questions and hurried reading of guide books and notes by burning the midnight oil, just to scrape through. At last the students’ labours—whatever they are worth—are rewarded with success. The convocation is an annual ritual—the usual

* P G Altbach *Turmoil and Transition*, p 84

† M Cormack *She Who Rides a Peacock*, p 80

‡ P G Altbach *Turmoil and Transition* p 84

advice by the elders—"that students should contribute their share to the glorious task of building a new India." Before Independence, the Indian student had a cause and a mission—to work for the political freedom of the country. After Independence, he has no goal, no purpose. He has hardly any devotion or loyalty to his institution. His association with his institution is formal, it is only a gateway to a degree or to a job.

There is no denying the fact that the average lecturer of an affiliated college is poorly equipped for his job. He suffers from a sense of inferiority complex partly due to his minimum qualifications and low salary and partly due to the place assigned to him in society. The politicians and the businessmen look upon him as one having the status of a clerk. The teacher has hardly any security or authority. Devoted and scholarly teachers are a rare commodity and they are held in disdain by their colleagues as a caste of intellectual untouchables. In an age of rising expectations, the teacher's pitifully low salary compared to his job responsibility makes him seek avenues of additional income like examinerships, tuitions and hack writing. It may be noted that over 74% of the total teaching staff of about 1,07,431 in affiliated colleges are working as lecturers in the grade of Rs 300-600 and their conditions of service are unsatisfactory. The teacher's frustration makes him indifferent to his duties. He has hardly any sense of commitment to the institution. Here and there, some good colleges associated with denominational societies have a core of devoted teachers who have set higher goals to themselves and are not hothered about the pay packets. By and large, the teaching staff is not interested either in improvement of standards of teaching or engaging themselves in fruitful research projects.

Student amenities and welfare

Student services of some sort exist in a majority of affiliated colleges. However, very few of them have employment information and vocational guidance services. Though most of the colleges charge a medical fee, there is hardly any medical examination worth the name or any medical advice offered to students suffering from physical ailments. The provision of health centres

in the colleges is still in the blue-print stage. The students need non-resident students' centres to enable them to do their academic work during their leisure hours. Nearly 10% of the colleges have so far benefitted from the UGC assistance for the establishment of such centres. Similarly hostel accommodation is inadequate and in many cases hostel rooms are overcrowded and without adequate messing, and sanitary facilities. Students aid fund has been started in most of the colleges to help poor students to pay their fees and buy their books. Guidance and counselling services to help students to solve their personal and emotional problems are sadly lacking. But who can deny that in spite of the limited assistance given by the UGC for students welfare programme, the services are inadequate in relation to the complexity and magnitude of the problem.

Physical education at the college level has been neglected. There is a general apathy for sports, both among the teachers and the taught. Hardly 10% of the students participate in games and sports, the main reason being the lack of funds and the paucity of play grounds and gymnasiums. The need of a scientific approach to physical education has been realised, but little has been done to build up the skill, strength and endurance of university athletes. Cultural activities are also confined to a few students and the number of functions is also limited. In order to keep the students busy and to promote their physical development, it may be essential to utilise the students' labour—*shramdan*—for the development of play grounds and playfields. However, in crowded cities it may not be possible to provide play grounds to each college, but public play grounds like public libraries could be provided for a number of educational institutions situated in a particular area. Organisations like the National Playfields Association of U.K. or the Recreation Movement of U.S.A. need to be established in India both at the national and the State levels. Good sportsmen could be identified and coaching arrangements made for improvement in performance and attainment of proficiency.

It may be noted that adequate provision of students' services will not only improve student discipline but also lead to better academic performance. To this task the teachers must cooperate

and voluntarily come forward to take up different assignments in sports and extra-curricular activities and welfare projects. What is needed is a responsive and sympathetic approach to the needs of the student community.

The necessary dialogue

What have the universities done for their affiliated colleges? At best the university collects admission particulars of students from colleges, prescribes books and courses of study and conducts examinations. It does not in any way participate in the teaching or in the improvement of standards of its colleges. Where is the constant dialogue between the university and its affiliated colleges so necessary for the improvement of standards of instruction? Even where universities have employed Deans of colleges and Development Officers, hardly anything has been done to guide the affiliated colleges. Unfortunately the universities have not given the necessary advice to affiliated colleges regarding the development of their libraries, laboratories, reading rooms and hostels. They are given step-motherly treatment though the number of students studying in affiliated colleges is more than 23 lakhs. Has the university ever thought of issuing a newsletter or bulletin for the benefit of colleges to provide information about the new reading material or equipment, improved methods of instruction, orientation courses and programmes of research? Has the university made a special study of the problems peculiar to collegiate education or prepared a perspective plan for the location and development of colleges, taking into consideration the special needs of the region? What about the demand for diversification of courses in order to meet the socio-economic needs of the people within its jurisdiction?

One way in which the university could improve the teaching in the colleges is by deputing teachers from its own departments to affiliated colleges for delivering a course of lectures or for organising seminars in particular subjects. It could also invite selected teachers from affiliated colleges for specialised training in new disciplines. Has the university thought of organising refresher courses for the benefit of teachers of affiliated colleges in some of the new subjects? Has the university selected a few

postgraduate students from affiliated colleges and invited them to spend a term or semester in the university department or attend an international seminar hosted by it? If this is not done, how will the students come in contact with outstanding teachers in particular subjects and utilise the library and laboratory facilities in university departments? Why cannot the university invite college teachers to avail themselves of the library and laboratory facilities available in university departments during holidays or in vacations?

Postgraduate colleges

Postgraduate colleges exist in most of the Indian cities. Their total number today is over 600. It has been observed that two or more postgraduate colleges situated in the same town teach the same subject. This leads to duplication of staff and equipment and the number of students is divided among the institutes with the result that at each college there are hardly a few students who study the same subject. The University Grants Commission is seized of the problem and has recommended to the universities that facilities for postgraduate teaching should be consolidated so that the resources of a number of colleges are made available for teaching the same subject on a cooperative basis. In this connection, the Chairman of the UGC in his address to the Conference of Vice Chancellors held in April 1969 observed

“In several parts of the country there is at present too much fragmentation of facilities at the postgraduate level. A major step towards strengthening of postgraduate education would be to pool together the available resources. There are far too many colleges and university departments in close proximity to one another (in a few cases separated by no more than the width of a public road) providing postgraduate course in the same subject and almost invariably the facilities at each place in terms of staff, laboratory equipment and library are deplorably inadequate. There is an urgent need for effective coordination and rationalisation of postgraduate education and elimination of wasteful fragmentation. Concentration of effort and rational development of available resources would bring about a distinct improvement in quality, at present deplorably low in several places.”

Autonomous colleges

The University Grants Commission in its efforts for the improvement of collegiate education proposed the scheme of autonomous colleges so that selected colleges may be given a special status in order to make experiments in higher education. Such colleges may frame their own rules of admission, prescribe their own courses of study, make experiments in teaching techniques and conduct examinations. The parent university will only provide general supervision and confer degrees at the end. The idea behind the scheme is that the colleges may be able to attain a high standard of proficiency. There are however some apprehensions that autonomous colleges, if established, may not be able to resist external pressures and pulls and may dilute the standards by boosting examination results. It will also discourage uniformity in the maintenance of standards and it may not be possible to revoke the autonomous status, once it is given. Some educationists feel that it is anomalous for universities to award degrees to students of autonomous colleges because the university has not prescribed either the courses of study or conducted the examination. It will be better if the autonomous colleges award their own degrees. To this contention the reply will be that if colleges are allowed to award their own degrees, there will be such a great diversity of standards that the level of attainment of the graduates cannot be measured. The Commission after looking into the pros and cons of the scheme decided that a modest beginning may be made in one or two colleges in each university within the existing university Acts. The criteria for selection of colleges would be its past record and performance, the physical facilities available, the potential for further growth and the general tone of discipline of the college and a period of two years may be necessary for an institution to make adequate arrangements and preparations for exercising the privilege of autonomy and its functioning will have to be periodically reviewed. The response to this scheme has been very poor and only one college so far has applied for the status of autonomous college.

} The scheme of autonomous colleges could gather momentum if such colleges, instead of being affiliated to a particular

university come under the purview of an all India body, for example the All-India Council of Collegiate Education to be established for the purpose Mr S S Ray, the Union Education Minister recently suggested the establishment of a separate machinery to handle problems relating to higher education which were not the direct concern of the universities

Democratisation of administration

The question of governance of colleges is currently being examined by an expert committee of the UGC. At the moment the management of colleges is left to the Governing Bodies, the Principal and the Staff Councils. Many of the university Statutes and Ordinances have laid down the constitution, powers and functions of the Governing Body. The powers of the Principal and of the Staff Council have been prescribed by Ordinances. In Delhi University, Ordinance XXI provides for the constitution, functions and duties of the Governing Body. With regard to the Principal's powers and functions, a new experiment has been made by Delhi University under which the college administration is to be run jointly by the Staff Council and the Principal under the system known as Principal-in-Council. Undoubtedly, the powers of the above Council have eroded the powers of the Principal and the younger teachers have now become conscious of their participation in college administration. Though it ended one-man rule in the college it has created certain conflicts and groups in the college staff. Recently the Delhi University Teachers Association suggested that representatives of the students and the ministerial staff should also participate in the deliberations of the College Staff Council. As it is, the Staff Council is rather unwieldy as its membership ranges from 70 to 120. In order to make the Staff Council function efficiently, it is suggested that only the heads of departments and one representative each of the ministerial staff and the students may form the executive body of the Staff Council. It is necessary to define the powers and functions of the Staff Council so as to make clear which decisions of the Staff Council are mandatory and which are recommendatory in character. The powers of the Principal also need to be clearly defined in relation to the Staff Council and the Governing Body. Perhaps the expert committee of the UGC

which is considering the matter of governance of colleges will laydown definite rules and regulations for the functioning of all these authorities.

Finally, the problems of the affiliated colleges need a close examination by the university to which they are affiliated, the State government and the UGC. Apart from financial assistance colleges need expert guidance in academic, administrative and financial matters. Until and unless serious efforts are made to improve their working and performance, the standards of higher education cannot improve.

11. Student Violence

DR. SUSHILA MEHTA

SINCE the beginning of the sixties, practically the whole of the last decade saw unprecedented upsurge of student movements, agitations and lawlessness in university campuses. Educationists, parents and the public are bewildered and stunned by this recurrence of violence. Social scientists and research workers sharpen their intellectual perception to understand this unusual phenomena of violence of younger generation in a country and culture wedded to values of non violence for thousands of years. In the wake of seminars, conferences and research studies, the so-called "causes" of student unrest are investigated and various theories are propounded in order to deal with these violent social trends which threaten to continue and intensify in the seventies.

What are known as the "causes" of students' unrest have varied from campus to campus and from time to time. In April 1965, when students attacked the Vice Chancellor of Aligarh University, the main cause of their violent behaviour was said

to be their demand for reservation of 75% of admissions for local students instead of 50% as decided by the Academic Council. The immediate "causes" of student unrest often related to the university and its educational programmes, specially to admission rules, reduction of tuition fees, medium of instruction, reorganisation of courses of studies, recognition of degrees or diplomas and greater facilities in hostels and messes. In July 1970, when students of Delhi University held a demonstration before the Vice Chancellor's office, they demanded "relaxation of admission rules, reduction of tuition fees, introduction of the M A Correspondence Course, and provision of Hindi medium of instruction in all courses"

The last examination season in many university campuses was interrupted by agitations and lawlessness. Students' demands centred round the examination schedules, difficult examination papers, promotion of failed students etc. Some of these demands revealed the mentality of modern students which likes to avoid hard work and acquire easy success. For example, *The Hindu* reported on 29th April 1971 "More than 100 students including girls and teacher-candidates have been caught while using unfair means at different examination centres of Kanpur University. Flying squads and investigators were faced with a difficult situation, when they discovered that many girl students hid the answers in their clothes before coming to examination hall." On many university campuses students have agitated for re-scheduling of examination, difficult question papers and reduction of pass marks and even for the right to copy answer papers in examination halls. In July 1970, a group of Delhi University students demonstrated before the Vice Chancellors' office for unconditional promotion of all those students who had failed in first year Arts and Law examinations. This sort of demand can hardly be acceptable to the university authorities for it will lead to further deterioration of educational standards which have been considerably lowered in the past few years. However, the popular demand for reform of examination system should be considered in a different category.

Whatever may be the agitations in connection with examinations, it does not mean that there are no genuine causes of student

grievances With mounting cost of higher education, the economic difficulties of students from lower-middle class families who form a large hulk of students' population in modern universities cannot be ignored Of similar nature are the demands of students for better hostel facilities, better messing arrangements, reduction of charges for messing and hostel fees In many hostels, messing remains a constant source of irritation for students Due to neglect, corruption and cheating by mess-contractors, wardens and caterers, students suffer from mal nutrition and stomach troubles Students who are away from home and suffer from loneliness are easily roused by small incidents in the mess They hardly find redress of their grievances in spite of repeated demands and complaints The immediate "causes" of students' unrest are generally obvious to any one who cares to discuss the matter with students concerned or even reads newspaper accounts.

Whatever may be the immediate "causes" of student unrest the long range socio-economic and political factors which build up these tensions are even more alarming Those who tried to study the flare-up in Aligarh University in 1965, pointed out that apart from the immediate "causes", there were other socio-economic factors and agitation was 'sparked off' by "political events, economic conditions and communal fanaticism" It was on account of the political and communal nature of students' groups and their violent activities that many agitated members of U P Vidhan Sabha demanded the closure of Aligarh Muslim University In November 1968 when violent incidents rocked Banaras Hindu University, immediately after the elections of students' union president, anyone who was familiar with university scene, knew that it was an involved story of months of tussle between different groups of students aided and abetted by different political parties In the elections of the president of students' union when the candidate of Vidyarthi Parishad (backed by RSS and Jan Sangh) lost to the candidate of Samajwadi Yuva-jan Sabha (supported by Samyukta Socialist Party) and Federation (backed by C P I), the defeated party started a reign of terror in order to prevent the elected candidates from assuming office and running the union activities Similar incidents continued in 1969, 1970 and 1971 Due to these violent clashes of groups of students when authorities were forced to close down

the University, the Vice Chancellor, Dr K L Shrivastava, tried to analyse the causes of the trouble "There was a division of students into small groups and sub groups aligned according to political, caste and other considerations" It is this type of involved and indirect interference of political parties and outside bodies in the affairs of the university that introduces elements which cannot be easily controlled by university rules and regulations and can not be set right even by strict and impartial exercise of authority The communal and political nature of groups which dominate the governing bodies of many northern universities percolate to university faculties and to the students The student groups aided by the dominant communal factions of the governing body and the university faculties, develop aggressive attitudes and refuse to abide by rules and regulations of the university and thus they come in conflicts with other groups of students The spirit of communal groups and factions which is the bane of Indian society is also afflicting the university campuses and giving rise to power-conflicts on campuses Students, forming the most sensitive sections of the academic community, take law in their own hands and turn university campuses into battle fields for trial of strength through brickbats and soda water bottles

During these struggles it is a small but well organised group of students who engineer the troubles which flare up into violence and hooliganism and result in closure of the university and police intervention At this time a large majority of serious students cut classes and keep aloof from campuses for fear of getting involved in hooliganism or retaliatory police action This has been pointedly brought out by Dr K L Shrivastava in his report on the closure of the Banaras Hindu University in September 1971 "The circumstances in which the Vice Chancellor of the Banaras Hindu University was compelled to take the extreme step of closing down the University were the culmination of a series of events which left no doubt in the mind of University authorities that determined and persistent attempts were being made by some groups of students to paralyse the working of this national institution" says the report of the Vice Chancellor of Banaras Hindu University, and he goes on "These groups, though forming a small percentage of the aggregate of student body, are in actual number large enough to employ their militant tactics effectively

to overawe and coerce thousands of peaceful students. Reports were current that serious students were being subjected to intimidation and duress. Militant groups representing not more than a small percentage of students can play havoc unless there is a strong public opinion in the campus against hooliganism and violence."

Describing the election strategy of the two students groups viz (1) Vidyarthi Parishad, (2) Samajwadi Yuvajan Sabha, the report adds "The entire strategy and tactics of these two groups were evolved in order to capture the students' union in the forthcoming elections. To achieve this aim, they began to assume not only threatening postures but in order to remain in the lime light of student voters and gain cheap popularity, they began to draw up endless catalogues of grievances and demands many of which were quite preposterous."

In this involved atmosphere of groups and factions and power-struggle on the university campuses, a new type of character emerges masquerading as students' leader. Such leaders exhibit all the characteristics of 'professional agitators'. They have a penchant to dramatise students' grievances. They use soap-box oratory to rouse the young inexperienced student mobs. They have a knack of exploiting the idealism of the starry eyed without sharing any of their values. Adroitly they use every opportunity for publicity to enhance their own prestige and power. With their aggressive, exhibitionistic dialogues, they stir innocent groups of students to a mob-hysteria. They have techniques to use symbolic violence to arrest public attention and when their violence compels the authorities for holding hurried negotiations, the so-called student leaders cleverly use the opportunities for their own ends. They use every incident of student troubles to secure more power and leadership. Once entrenched in the position of power and leadership they try to establish contacts with persons occupying commanding positions in education, in government and in industries. Often they work their way to lucrative jobs or careers in politics or other fields at the expense of innocent student masses. Often students' leaders develop a vested interest in stirring up or abetting students' agitation. A depth study of the patterns of leadership of the students would throw considerable light on the results of students' unrest.

As the students' agitation begins, it exhibits all the characteristics of mob behaviour. An average student who suffers from frustration and grievances is prone to agitational approach. Adroitly the students' leaders build up the tensions and lead them to mob-frenzy and direct their fury to destroy university property, humiliate the teachers and gherao the administrators. When the group demonstrations turn into mob hysteria the entire character of the incident changes. Each individual student is drawn into mob frenzy by a sort of hypnotic force of mob hysteria. The precarious self-control which young student has acquired with difficulty, breaks down. His behaviour is hardly controlled by his own will. The group develops, as it were, an automatic character. Each student tries to out do the other, for it gratifies his desire to wreak a vengeance on those who seem to be the symbols of his frustration. The repressed fury of his frustration flares up into full force. The student does not feel individually responsible for his own behaviour, for his actions have acquired, as it were, a group sanction.

The tragic irony of such a situation is that the innocents become the unintended victims of retaliation. While the ring leaders who direct the agitation go scot free or even reap rich dividends, in publicity, power and leadership, the inexperienced innocents bear the brunt of punishments. The violent activities are often incited by the support of the group but in times of confrontation with the authorities or the police, the leaders slyly retreat leaving the unsuspecting innocents to bear the brunt of retaliation. Often the whole thing assumes a malevolent character and the exploitation of the starry-eyed idealists takes place at the hands of the unscrupulous and professional agitators. The agitators may not share any of the ideals or the values of the mass of students but they use the occasion for their own personal advantage.

Anyone who probes deeper into the students' demonstrations would soon realise that the immediate and apparent 'causes' of students' unrest are only "sparks" to ignite a situation which has already reached an explosive stage. The long term processes which bring about such an explosive situation lie deeper in the socio-economic and political life of groups of students, the university faculties, the governing bodies and the community. In their

anxiety to deal with the problems of students' unrest some progressive universities try to concede demands of students for minor changes in examination schedules, difficult question papers, and curricula and by increase of welfare facilities. However, in many cases these efforts are like dealing with symptoms while the inner maladies remain festering. Probes into the vigorous Hindi campaigns by Delhi University students in January and February 1968 revealed that students were using Hindi as a pretext for students expressing their resentment and frustration, as the root cause of agitation lay in their fear of a "dark future" after graduation. The spectre of unemployment looms large over the heads of all those students who leave colleges and enter the employment market. This fear and insecurity adversely affect the attitudes of students towards authority, the teachers and the educational institutions in general.

It is now a well-known fact that the unemployment of the educated young men has been steadily rising in the last few years. A broad survey of the employment position in different States presents a frightening picture. The number of educated unemployed on the live registers of the Employment Exchanges doubled during the last five years. In 1965 the number of educated unemployed was 8,41,833 and in 1969 it rose to 15,26,250 and in 1970 the total number of educated unemployed increased to 17,60,000. There are now 10,00,000 matriculates, 4,69,000 undergraduates and 26,8,000 graduates unemployed in the country. The unemployment of a number of qualified engineers and doctors has given a rude shock to many who advocate nationalisation of education. A director of an educational institute felt that the trouble behind the student agitation was to be found in the educational system that was not geared to the employment potentials of different fields of work in industries, commerce, agriculture, transport etc. Even the professional education did not impart sufficient practical training to students to enable them to work on their own instead of hankering after white collar jobs. It is often felt that the system of purposeless education in Arts colleges and even general science courses have little relevance to the growing needs of the community and the employment market in the country. Unless and until courses and training programmes are radically overhauled to meet the growing needs of students and provide relevance and meaning in the present situation, students' unrest cannot be adequately controlled.

In an important sense the educational system has failed to be fully integrated with the total social system where the highest rewards are not acquired by the educationally meritorious. For it is well known that some brilliant scholars who won distinctions or honours in the university after years of hard work, could hardly secure a living wage, while their class-mates who were average or even below average, have in later life flourished and amassed vast fortunes through business or industry. Some who took to politics became leaders at district, State or national levels and secured many privileges. Even in specialised fields like education and science those who were brilliant could hardly manage to secure posts of research investigators or lecturers, while some with average attainments who knew how to "pull the strings of pressure and influence" managed to reach the top and enjoyed privileged positions. If the entire reward system of the country is not geared to the merits or achievement or hard work but to the "pulls and pressures" of kinship, friendship or affinities of language, religion, caste or faction, no one can expect students to respect educators or readily obey their commands.

As the industrial changes gather momentum in the country, the old social structure and its basic social institutions like the patriarchal joint family become obsolete. As the patriarchal joint families break up the cultural values on which they are based *viz.*, respect for parents and veneration of the older generation begin to dissolve and a condition of "anomie" ensues. Durkheim, the noted French sociologist who was deeply concerned about the outcome of industrial and social changes described the concept of "anomie" through the stresses and strains of social relations of individuals due to their rising aspirations under changing social conditions. Durkheim noted the "explosion of expectations" as the limits of institutional controls are removed. Therefore, according to Durkheim, "the limits are unknown between possible and impossible, what is just and what is unjust, legitimate claims and hopes and those which are immoderate. Consequently there is no restraint upon aspirations with increased prosperity desires increase" *.

With rising aspirations of students, the authority-crises from

* Emile Durkheim *Suicide* pp. 252-53

which modern universities suffer threaten to deepen. As the old cultural values of the joint family begin to vanish, the students refuse to accept the authority of teachers whom they regard as symbols of old cultural values. The authoritarian structure of the university "frozen in 19th century mould" is bound to come in conflicts with the democratic ideals of modern ambitious students. The hierarchal structure of the university which also reflects the traditional values of the old caste ridden society does not encourage free and spontaneous participation of students on equal terms because teachers are too much conscious of their status and prestige. In the Joint Consultative Committees set up by some progressive universities to discuss the problems of students, there is little free discussion. Often the Consultative Committees turn out to be confrontation committees divided between students and teachers. In some universities the Joint Consultative Committees have become lifeless straight jackets where teachers pay lip service to the problems of students, but precious little is done to solve them. Students feel and complain bitterly about their difficulties and when they find that no action is taken to solve them, they become cynical and cut jokes at the cost of teachers and educational authorities. The young starry eyed students demand consistency between words and deeds of teachers and those who are in authority. But they find that promises are made but seldom kept even by persons in high places. The governing body, the Vice Chancellor and professors all discuss and give lectures on students' problems but they have little time to listen to their actual grievances. They have big schemes for students' welfare which are inaugurated with much fanfare but these have little relevance to the actual conditions and complaints of students and little is done to solve their basic problems. Even if the students give in writing their complaints, the authorities have hardly any time to read through the memorandum not to speak of taking remedial action. Unless and until the students demonstrate and gherao the Vice Chancellor, they cannot secure attention for the redressal of their grievances. Such inconsistencies, double talk and hypocrisy is bound to invite contempt of and defiance by the students.

This does not mean that there are no good professors or conscientious teachers. However, they find it difficult to take necessary

action for the removal of grievances of students as the modern university is a bureaucracy which is wedded to procedures. Perhaps, it is difficult for students to realise that even university authorities are prisoners of official bureaucracy which usually takes care of fees, records, registers, mark-sheets, certificates and pay rolls. In all modern universities, the office of the Registrar which is wedded to procedures, rules and regulations, is very slow in taking action even in urgent matters. The forms, the regulations, the registers and procedures present no small hurdles in students' relations with the universities and their faculties. The red tape of the university bureaucracy would take weeks and even months to issue an urgently needed certificate of a correct mark sheet. Students suffer due to the lethargy and the casualness of a clerk dealing with examination results. Such impersonal treatment in dealing with vital matters connected with the career and future of the students is bound to create bitterness, defiance and violent outbursts on the part of students.

In the impersonal atmosphere of the large modern universities, students suffer from indifference, neglect and callousness. The university offices treat very casually the urgent personal problems of students. Students sometimes become desperate when they find that their real difficulties are nobody's concern in the university. They realise that no one would listen unless and until they dramatise through violent reactions. Sometimes, as a last resort students use violent gimmicks. Symbolic violence quickly arrests the attention of the public in a country almost pathologically addicted to non violence. Symbolic violence is often used by students as a means to secure the redress of their grievances by the authorities concerned or intervention of someone who can force concerned clerks or officers to take prompt action.

Exposed to the contradictions and conflicts of a fast changing society, the youth suffer from strong ambivalence towards old culture and its values. They regard the teachers, the authority and older generation as its symbols. As Van Ree pointed out in his recent book entitled *Colliding Generations*: "Once ambivalence begins to prevail in the social relations of younger and old generations, a process of action and reaction between involved individuals or groups starts, leading to enhancement of tensions

The parties concerned get gradually more entangled in each other's emotions" The root cause here is the enhanced tempo of development of science and technology demanding a new attitude to life which requires the adoption of different standards of values in social relations. The caste system which provided a broad frame of social relations between groups and individuals became an anachronism long ago. The cultural values of caste system which may be summed up briefly in the concept of "varnashram dharma" lost their significance and grip over the minds of the younger generation. However, the social controls and prejudices that the caste-system represented do not automatically wither away. They assumed different and distorted forms and exercised greater coercion.

This mounting coercion and oppression of old and traditional cultural values, intensify the antagonism of those who are already alienated from the social system. Marx's concept of alienation was clearly formulated in his *Economic and Philosophic Treatise* of 1844. Marx's concern was with the impact of industrial revolution on man. It was man's subjective reaction to objective societal conditions. However, later on the concept has been found relevant in many social processes in changing societies. Students feel alienated from the educational system not only because of its lack of meaningful experiences for them but also because of its lack of relevance to their careers and future and utter indifference to the urgent problems of society. Once the process of alienation starts, it gradually envelopes many aspects of life and the society in general and even the individual's own self in particular. The alienated individual then suffers from a lurking suspicion that he is being exploited by all the people around him and he develops a conviction that there can be no social justice in the existing social order and the whole society needs drastic revolution to set it right. Such students are easily attracted towards violence and revolutionary movements. It is a strange spectacle in a country wedded to the values of non violence for thousands of years to see its own younger generation advocating violence as the only means of the country's salvation. To some of the discerning youth leaders it is clear that under the great banyan tree of non violence, so many terrible social evils have grown and developed in extreme forms in India for which no parallel can be found in any other

country. Social evils like untouchability, casteism and caste-taboos, superstitions, child marriages, child-widows, exploitation of tribals, near serf conditions of landless agricultural labourers are some glaring examples. There are some student-leaders who talk of creative violence. A student leader of Hindi agitation remarked "The burning of buses, railway carriages, post-offices, power stations or sometimes looting during the heat of the moment might be considered bad by the sophisticated but it is all in the game," and he boasted "Our generation has achieved in one week what elders could not achieve in twenty years. You can see the sign boards and the number plates on cars, buses and trucks they are all in Hindi."

To many in India such a theory of "creative violence" or "creative destruction" would sound fantastic, if not absurd. To most of us conflicts and violence seem to be destructive and socially dysfunctional. However, studies and analyses of sociologists like George Simmel make it abundantly clear that conflicts and violence have a definite social function in group cohesion and especially in changing societies. If conflicts and violence were entirely dysfunctional we should have discarded them through old traditions and cultural values of non violence. In spite of vigorous and living traditions provided by such great leaders like Buddha and Gandhi, if violence and conflicts persist and even increase, it only confirms the vital function which conflicts and violence play in changing human societies. What is the exact function of such a process of conflict and violence remains a moot point. Some negro psychiatrists have written of violence as a "cleansing force" and as a means of gaining "wholeness" and "escaping from degradation". A negro psychiatrist writes "Violence is a cleansing force. It frees man from his inferiority complex and from his despair and inaction, it makes him fearless and restores his self respect".

The most sensitive sections of society namely the alienated students are drawn into the organised violent revolutionary movement like the Naxalbari campaign. In 1967, as the first shots were fired by communists (*Marxist Leninists*) in Naxalbari area of West Bengal the coffee houses of College Street of Calcutta teemed with students animatedly discussing a second Indian revolution. Students and young men sporting beards were trying

12. Student Participation

DR. G.S. MANSUKHANI

THE need for student involvement in higher education is no longer a matter of controversy, student power is a force to reckon with. The Vice-Chancellors' Conference (1969) accepted the principle of student participation in university affairs, but desired that the details be worked out by a committee of the UGC.

The older generation, vested interests and pedagogic orthodoxy entrenched in the university bodies are resisting the association of students with university affairs. They emphasise the ignorance and immaturity of students, their brief stay and indifference to studies, but behind this is a fear that once students are allowed to enter university bodies, they will ask for more and more powers.

On the other hand, the students and their leaders emphasise that the university is a corporation of teachers and students and unless the students are enabled to participate in academic life on equal terms with the teachers, the university cannot be expected to discharge its obligations effectively and fully. The university

system can no longer be envisaged as a spiral hierarchy with affiliated college teachers at the lowest rung and university bureaucrats at the highest. If the university works like a bureaucratic machine, it cannot survive. It has to function as a dynamic and forward looking organisation, with students and teachers as equal partners in all its activities. Prof. V. K. Gokak writes in this connection: "A university decision is a collective decision—a symphony in which the voice of the students contributes its own note."

Student participation is also essential for the distribution of power so as to include progressive elements of social change and service to the community. The university cannot exist in an ivory tower. It is a part of the community and a training ground for regional and national leadership. As such, students can be trained in the form of self government through their participation in the administration of the affairs of the university. It is true that recently some of the universities have appointed Deans of students welfare or Joint Student Staff Welfare Committees, but there can be no substitute for direct participation of students in projects where their sense of initiative and responsibility will be put to test. They want the excitement of "stirring their own porridge". Moreover, the freshness of outlook and freedom from inhibition of the average student will be a great asset. Student participation may not solve the problems of the lack of Indianness in our higher education or of the educated unemployed, but it will help the process of orientation and relevance of studies to our needs and improvement of university system. Moreover, it will tend to make the system student oriented. If education is meant to help the student to rise to his full stature, let us ask the wearer, where the shoe pinches.

While on the one hand student activists cry for greater involvement in university administration and management, the progressive academicians support the demand in order to avoid confrontation with the student body and for fear of being labelled as reactionaries. Conservative elements in all countries will oppose the demand of student participation because it is taken as a revolt against the Establishment. They feel that such participation may result in the lowering of academic standards.

They will play up the fear of revolution and the activities of "student spies" In the House of Lords debate on 19th June, 1968, the consensus was that student participation will be "pre mature and inappropriate" But this opinion applies more to the revolutionary element than to the reformist section in the student community The majority of student leaders want institutional reform, not social revolution They have concrete proposals for administrative, curricular and examination reform Undoubtedly, there is a great and urgent need for change in courses, in teaching techniques, in methods of assessment and evaluation of students' performance The new media of discussion, debate, work study, seminar, field work, research project will mean a greater involvement of the university with the development both of the individual and the community

If educational administrators do not read the writing on the wall and meet reasonable demands of students in an amicable manner, and dole out concessions by fits and starts, the student leaders will fall into the hands of political parties which are all the time on the lookout for exploiting any opportunity to challenge the university authorities and magnifying grievances for resort to strikes and violent demonstrations Even now we see that political techniques like hiring of 'toughs', destruction of property and pressurising of those sitting on the fence, are used by students to secure their ends

Areas of participation

While there is no controversy regarding the participation of students in all activities which have a direct bearing on student life as for instance, hostel administration sports and co-curricular activities, student participation in policy making bodies of the universities like the syndicate, senate, academic council and boards of studies has still to receive recognition of the academic community What is needed is a dialogue between the students and the university authorities regarding the degree and nature of student involvement and the demarcation of the areas of agreement on this issue

Similarly, in the case of colleges, student participation in the governing body will come in due course But it should be borne

in mind that if participation is to be meaningful, students should have the status of "full members" and not "coopted members" or in an advisory capacity. They should have the right to initiate the agenda and the right to vote. They should have access to all the relevant papers and should have an opportunity to express their views fully and influence the decision in a democratic manner. Moreover, the representation of students should be adequate and effective. Notional representation of a few students—as for instance in the University of Sussex, 2 student representatives out of 175 on the Court and 7 out of 117 on the Senate—will not produce any tangible result. It is suggested that student representation on the decision making bodies will not only serve as a training ground for youth leadership but also democratise the administrative set up.

Proposed compulsory participation

Public interest in student involvement has increased on account of frequent demonstrations and agitations. Mr Madhu Limaye introduced a bill in the Lok Sabha on 21st February, 1969, namely the University Grants Commission Amendment Bill (1969). Under this bill it is proposed to secure student participation in a very active manner in all the decision making bodies both at the university and college levels. In the statement of objects, Mr Madhu Limaye stated that at the present time the Parliament is not authorised to pass any law in respect of university education in the States. However, the UGC has the powers and the resources to secure improvement in the quality of university education as well as their administration. The Central Government has through the UGC secured such improvement through the proper use of the Commission's power to make grants to State universities. The bill lays on the UGC the additional duty of making recommendations to the State universities in respect of compulsory setting up of university and college unions, establishment of joint teacher student committees and association of students representatives with the decision making bodies of the university. According to him, these measures will remove the sense of frustration among the students and create a healthier academic life.

Under the bill, it is proposed that students unions should be compulsorily set up in all colleges and universities. All students will be members of the union, but if anybody desires to opt out, he will be permitted to do so. Only students will be allowed to run the unions. Secondly the bill will enable the necessary amendment of the University Acts to provide for participation of students in the university bodies like the Executive Council, the Court, the Academic Council etc. The bill also lays on the UGC the duty of recommending to the State universities the participation of students in decision making bodies. Thirdly, there is a provision for mandatory setting up of teacher student committees at the university and college levels for discussing university and college affairs and making suggestions to the appropriate college and university bodies. In view of the disruptive activities of some university unions, the UP State has recently abolished the compulsory membership of students union. If Limaye's bill is passed, it might create difficulties in Centre State relations.

Experimentation

The majority of Vice Chancellors of Indian universities do not seem to be in favour of student participation in decision making bodies, according to information gathered by the UGC. So far Kerala University has permitted three student members to sit on the senate under section 15 of the Kerala University Act, 1969. Cochin University has given representation to students both on the Senate and the Academic Council. Bihar and Rajasthan States have agreed to allow student participation in the administration of universities in their areas. Bombay University has also permitted student representation on its Senate. Andhra University recently amended its code to enable its graduates to contest to the Senate. The alumni below the age of 35 and who are not far removed in time from their own student days could possibly provide fresh ideas to the academic community. For this reason some universities have provision for representatives of registered graduates on one or the other body of the university.

It may not be easy to follow the example set up by some American and Australian universities allowing substantial

student participation on responsible bodies of the universities. Though student participation is desirable in principle, it is necessary to choose senior students because a majority of the students enter the university at the age of sixteen when they are not quite mature, as compared with students in the West. The Chairman of the UGC recently stated that student participation in university and college affairs such as formulation and implementation of development programmes, hostel management and maintenance of discipline is desirable. But as regards curriculum and development of the universities, students have little direct responsibility, though their views should be obtained and considered carefully. In the case of appointments, promotions and administrative matters, students' presence would be 'inappropriate', but there should be opportunities to discuss the general principles with them.

Gajendragadkar committee report

A committee appointed by the UGC on the governance of universities under the chairmanship of Dr. P. B. Gajendragadkar submitted its report in June 1971. It contains the latest recommendations regarding student participation in the decision making bodies of universities. The Committee has recommended that 10 to 15% of the total number of members of the Court (senate) may be students. One third of the members of the Court shall be from the students union and the student council, one third elected by students of academic merit, and the remaining one third shall represent the Games Committee, Social Service Committee and Cultural Programme Committee of the university and the associations for extra curricular activities. The term of membership for student members will be one year. It has however ruled out student participation in the Executive Council and the Academic Council. The Committee felt that by giving representation on the Court the students will get acquainted with the broad administrative problems facing the university, including its budget and finances. Moreover, they will have the right of electing members of the Executive Council from the Court and they can play a decisive part in such an election under certain circumstances. These seem to be retrograde suggestions, because the Education Commission itself conceded the principle of

student participation at all levels, even in the Academic Council* In this connection the Education Commission observed "The principle that good ideas often originate at the lower levels of hierarchy must be recognised and respected. The tendency to attach importance to ideas and proposals merely because they emanate from persons who happen to hold important positions is unhealthy and particularly out of place in a university where they must be judged objectively and on their intrinsic merit"†

The Committee further recommended the establishment of a Student Advisory Committee for each faculty which will express its views on academic matters like the structure of courses, the content of syllabus, the pattern of instruction and of examination. This committee will consist of the Dean, the Head of each department, one student elected by the students of each post graduate department and half of the number of elected students to be nominated by the Dean from among the academically outstanding students. With regard to the Department or the Centre of study, the Committee recommended the setting up of joint teacher-student committees of departments. The reason assigned for the limited role of students in academic decision-making bodies is the need to modernise and upgrade courses of instruction—a matter with which the students are not conversant and therefore can make no contribution in the matter. It is quite understandable if students are excluded from participation in matters relating to admissions, appointments, promotions, setting of question papers and evaluation, as such decisions carry a professional responsibility which properly belongs to teachers and administrators.

The Gajendragadkar Committee also recommended the establishment of a Student Council‡. The functions of the Council are to consider the rules regarding discipline, NCC, students health and welfare, hostel management and allied matters and to make recommendations to the Executive and Academic Councils in relation to courses of instruction and the corporate life of the university. The council will be composed of the

* Education Commission Report p 297

† Ibid p 327

‡ UGC *Report of the Committee on Governance of Universities*, p 45

President, Vice President and Secretary of the Students Union, the Secretary of the Students Advisory Committee of each faculty, ten elected students and five students nominated by the Vice-Chancellor. This is entirely different from the joint consultative committee of teachers and students envisaged by the Education Commission. The student council will meet at least three times every year and make its recommendations to the Executive and the Academic Councils. It appears that the Committee has been rather conservative in its approach to the question of student participation.

The world is moving very fast and unless the moderate recommendations already made by the Education Commission are implemented, the students' impatience may lead to an intensification of their demand till a stage may come when any dialogue between the students and the university authorities may become impossible. It is, therefore, desirable that while there is yet time, student participation at all levels—in a small way to begin with—may be conceded without further delay. We live in an age of democracy, and students are a vital part of the academic community. To say that students will utilise their representation for lowering academic standards is to prejudge the issue. A beginning has to be made immediately, as it is only when proposals are made for setting up a students council that the student body will be pacified. It is therefore suggested that to start with, students may have one representative on the Executive Council, 10% of the seats on the Academic Council and 10 to 15% seats on the Court. With regard to Faculties and Departments, the establishment of joint teacher student committees will serve the purpose. All these measures may be phased in such a manner that the students are convinced about the earnestness of the authorities to introduce student participation at all levels. The recommendations of the Gajendragadkar Committee with regard to the machinery for direct and indirect election of student representatives on different academic bodies may serve as guidelines and may perhaps be modified to suit the needs of individual universities.

A university may lay down that 50% of the student representatives, be elected or nominated by the Union and the remaining

50% be nominated by the Faculty. In case of an affiliating university, the student representatives may be elected by an electoral college consisting of union presidents of all affiliated colleges. The joint staff student committee may consist of 12 members on 50-50 basis, students being nominated by the Union and teachers being nominated by the Vice-Chancellor (or Principal in the case of a college).

It will be necessary to lay down some qualifications for students seeking election to the important bodies of the university. These qualifications may be (1) only post graduate students or students in the final year will be eligible for selection, (2) that students will cease to be members of these bodies as soon as they leave the university or cease to be students. Casual vacancies for less than six months may be filled up by the Vice Chancellor from amongst a panel of students prepared by the Union.

It may be necessary to lay down a code of conduct for students in order to make their participation in university affairs smooth and rewarding. The students will have to take a pledge to respect the constitution of the university, to desist from destroying university property, to eschew violence and arson on the campus. If they violate their pledge, they will be treated as ordinary law breakers and not let off as juvenile delinquents. In this connection the Gajendragadkar Committee wrote 'When students studying on the university campus become violent, we must always remember that we are dealing with the anger of impressionable young persons, who may be acting under external influences or blindly protesting against alleged grievances, and they may, therefore, have to be dealt with as adolescents who are emotionally disturbed temporarily or psychologically ill adjusted or maladjusted. Even so, it is important to emphasise that the commission of acts of violence cannot be condoned, merely because the persons who commit such acts are young impressionable students of the university. If the Vice Chancellor and his associates find that the situation has gone completely beyond control, and a law and order problem faces them in all its nakedness, full assistance of the State authorities must be requisitioned *

It has been seen that on many occasions students have indulged in murderous attacks and wanton destruction of public property and no action has been taken against them for their transgressions. Moreover, the students must realise that resort to strikes and demonstrations is permissible only after negotiations and peaceful methods have failed. If this gentleman's agreement between the students and university authorities is observed, student participation will lead to a healthy cooperation between the administrators and the students. It will foster a sense of responsibility among the student representatives and thereby help in the training of youth leadership. In the present context, unless early and concrete steps are taken to win the confidence of the student community, student unrest like a festering sore will eat into the vitals of the academic life on the campus. It may perhaps be necessary to amend the university Acts to permit student participation, and this has to be done quickly to create a peaceful and healthy climate on the campus.

13. Segregation of Sexes in Indian Universities

DR. SANTOKH SINGH ANANT

A GREAT amount of interest has been expressed recently in the phenomenon of student unrest in India. Educationists and social scientists have offered various explanations. The problem has been investigated both by Indians and foreigners*. An important factor in the causation of unrest viz., the sexual frustrations resulting from the segregation of the sexes has often been ignored. Only one author hints at this problem and considers sexual frustration as a basic cause of student indiscipline†.

The segregation of the sexes in most spheres of human activity is widely prevalent in India. In most Indian homes, "the women still remain quite apart when the man of the house is entertaining male guests and usually only relatives visit each other as couples"‡.

* (a) S. Kakar and K. Chowdhry *Conflict and Choice* 1970

(b) L.S. Fucar *The Conflict of Generation* 1969

(c) A.D. Ross *Student Unrest in India* 1969

† L.S. Fucar *Op cit.*, p. 220

‡ A.D. Ross *Op cit.*, p. 207

The boys and girls and men and women are socially segregated. We observe this in separate institutions for boys and girls in most parts of the country. Even in co-educational institutions, there is virtual segregation. For example, Ross mentions the case of a co-educational college in Bangalore in which 'boys have their classes in the morning and the girls have theirs in the afternoon. At college functions, the traditional pattern of the girls sitting on one side of the hall and the boys on the other side is followed. They enter and leave the college by different doors.'* In some of the girls' colleges, policemen are posted at the gate. We can see the phenomenon of segregation in adult society at the time of religious functions in temples, political meetings, social gatherings, etc. In all these functions, there are separate seating arrangements for men and women. I have found the same segregation prevailing among Indians abroad i.e. in U.K., U.S.A., Canada, etc. The segregation of the sexes is 'so complete in India that very few Indians yet understand or accept the idea of friendship between the two sexes'†

I

In the course of development, the individual passes through infancy, childhood and adolescence. During the childhood period he learns physical, mental, emotional and social skills to cope with his environment. During this period he also develops his identity or self-concept. In other words he learns about himself, his relations with others and forms an idea about himself as a person. Self-concept develops largely through the perceptions and evaluations of others. We develop a view of ourselves through the 'looking glass' self, i.e., through others' view of ourselves. Thus one's self concept is a good indication of one's adjustment and mental health. Lack of self esteem on the other hand is always an indication of stress, tension and poor adjustment. When the self-concept is positive and realistic, the person is mentally healthy and well adjusted. The segregation of boys and girls leads to distorted and unrealistic identities. If the boys and girls interact with one another during this period, they will learn their respective roles adequately. During the early childhood period

* A.D. Ross p. 209

† A.D. Ross pp. 206-207

there is no segregation of boys and girls in India. It is only towards the end of the childhood period that parents start enforcing controls. Actually, this is the period when children are developing social interaction skills. If boys and girls are not allowed to interact with each other during this period, they would not develop the necessary social confidence which is necessary to deal effectively with the members of the opposite sex in later life.

If a family has both boys and girls, the inter personal contact between brothers and sisters eliminates this problem to some extent. That is probably the reason that in spite of the lack of opportunities for mutual contact, most men and women are still fairly well adjusted in their married life, though for many of them this adjustment comes through a period of trial and error, and possibly, of crises. However, the situation is especially difficult for boys and girls who do not have sisters or brothers. They do not find anyone in the family with whom they could interact on egalitarian basis. The segregation of sexes during this period deprives the individual of a necessary learning experience, which is crucial in the development of a positive and realistic self-concept. Parents can help in solving this problem not by acting as directors and controllers, but as guides and friends to their children.

In India, any contact between members of the opposite sex, whether it is during the adolescence or adult period arouses suspicion of the members of the community. If adults see a boy and girl talking to each other or smiling at each other, their first conclusion is that they must be having sexual relations. The young Indian women are still carefully guarded by their parents and wardens, and the boys exploit the opportunity when they find the girls alone. "The friendship between college men and women is quite beyond the Indian parents' comprehension, they cannot conceive of boys and girls going together as companionably as boys do with boys or girls with girls. The picture of friendship they see in American or English movies or read about in books, seems to them always to be of a pronounced sexual nature and they firmly believe that this type of friendship has only one aim—immoral behaviour".* In this connection it may be noted that the Proctor of Karachi University issued recently an

* A.D. Ross *Op cit*, p. 207

order forbidding boys and girls not only from having conversation with one another but also to maintain a distance of three feet between each other on the campus*

The possible reasons for such an attitude on the part of adults are the cultural tradition and the lack of sex education. They never saw their parents, uncles and aunts or grand parents socially mixing with other couples. Thus, they cannot comprehend the idea of boys and girls having companionship relations. As regards sex education the subject of sex is not misunderstood to such an extent in any other part of the world as it is in India. Sex education implies not only the knowledge of sex but also its discipline and training. It will reduce the incidence of V D and unwanted babies. However, parents never talk to their children about this subject. Even when they do, their own concepts are so distorted and emotion ridden that they convey a wrong impression to their children. The child develops a view of sex being dirty and something to be hidden. The facts of life are usually learned by the growing boy between the age of 10 to 15 from a school mate or a cousin of the same age group in a very distorted form. According to a survey by Kakar and Chowdhry, the first reaction of the boy is that of shocked disbelief, often followed by the thought, "even if this is true, my parents could never have indulged in such a filthy activity."† Deprived of the most essential contacts with the members of the opposite sex, the boys' concept of the girls is mainly based on fantasy. The girls are viewed not as persons but objects in the generally diffuse fantasies. According to Kakar and Chowdhry, masturbation is universal during the first years of college life‡. Due to lack of proper sex education, the prevailing beliefs about the effects of masturbation are still archaic, having their root in the traditional Hindu notion which equates 40-80 drops of milk with one drop of blood, and 40-80 drops of blood with one drop of semen. Thus auto-eroticism leads to guilt feelings and remorse. Excessive interest in masturbation and consequent guilt and remorse are no doubt the end result of the suppression of normal boy girl friendship and lack of adequate sex education.

* *Youth Chronicle* No. 45 (New Delhi 1971)

† Kakar and Chowdhry p. 64

‡ *Ibid* p. 65

II

Though the adults may think that by keeping the boys and girls apart, they are eliminating the problems which would arise from their free mixing the facts may be quite contrary. As boys and girls are kept apart, they tend to meet one another secretly. As these are the few 'stolen moments' which they may not get for a long time, they want to take maximum advantage of the situation. Many a times it has been observed that girls in such situations do not know what to do. As they have never interacted with boys on a companionship basis, they lack the social skills which would help them to tackle the situation. As a clinical psychologist, I have come across several cases where whenever a boy wanted to force his intentions on the girl, the girl just froze, i.e. she could not fight back or cry for help.

A classic case in this respect is that of a college girl who was referred to me with symptoms of severe depression. This girl came from a family which did not have a male child. Like many others, she was brought up without any sex knowledge or education. The only thing she had learned from some source was that if a man physically touched a girl, she was spoiled for anyone else. One evening when she was returning from college, a boy who was after her for many months and towards whom she had been unresponsive, caught her and embraced her from behind. She was very much disturbed and thought from that day onward that she was spoiled. She might have even mentioned this to the boy, but she did not relate this incident to her parents. The boy took full advantage of her innocence. One day he told her that she should go with him so that they can talk things over. When he solemnly promised not to touch her, she agreed to go with him in his car. He took her to an isolated place and molested her. She tried to fight back but did not shout for fear of scandal. Due to lack of sex education she did not even understand the full significance of what was happening to her. As she did not talk about it to anyone, the same boy took advantage of her twice again and could have continued had he not been killed in an accident (natural justice, perhaps). Had this girl been given proper sex education, and had she known men as persons and not as objects to be feared, she could have saved her honour. The above situation

would not have occurred if she had previously known boys as friends and companions and the tradition of superiority of men had not stood in her way

We often hear and read about sexual immorality in the West. Most of these reports are exaggerated. As boys and girls know each other as friends and are seen together in theatres and at other places, the observers (from India) usually form a wrong impression based on their own thinking on the subject. The incidence of premarital intercourse is about 50% in the girls who marry by the age of 25. In spite of complete freedom of the sexes throughout childhood and adolescence, the premarital relations during the early teens is quite rare—only 3% of all girls have such relations by the age of fifteen*. I suspect that the incidence may not be lower in India during this period in spite of strict segregation.

The girls' concept of boys is also unrealistic. They tend to see them as sex hungry creatures with whom contact should be avoided as far as possible. Even in the most metropolitan campuses, e.g., Delhi University, one occasionally sees groups of boys and girls together. Usually, boys roam about with boys and girls with girls. The groups of boys, however, are often seen taunting girls when they pass by them. This was one of the problems mentioned by girl students at the time of the student elections during July-August 1971. Several girls pointed out that they would like to elect those students as leaders who could protect them from the taunts and abusive language of the boys. If the adults, instead of worrying about normal boy girl companionship, could control these roadside Romeos (which, by the way, are their own sons) they would perform an invaluable service to the cause of morality.

What about young peoples' desires for association with one another? According to Ross, "The boys will say that they don't want to go with girls, but they will often stand for a long time, just watching them leaving their houses, or coming back from college. They are too shy to talk to them, but they get furious if they see them (girls) talking with another (male) student. They get jealous if they see them getting attention from anyone else"†

* J.L. McCary *Human Sexuality* 1967, p. 224.

† A.D. Ross *Op cit.*, p. 212.

Even their teasing the girls is a desperate reaction born out of the deprivation of normal companionship

The dilemma of students who want to have girl friends can be seen in the report of one of Ross' respondents

"At present, I have no girl friend at college whom I can take out. There are only a few whom I can smile at. Some girls near my home often come to my house to borrow books or other things. My parents do not object to them, but if I took out girls whom they did not know, they would certainly bang me like anything. I am very keen to talk to and go with girls, but what can I do?"*

Some people say that allowing boys and girls to have companionship relationships during the adolescent period would lead to complete sexual liberty and irresponsible behaviour. This may be true if we do not provide proper sex education and prepare the young men and women for responsible behaviour in this respect. If boys and girls are all allowed to interact freely and develop friendship relations, there is less likelihood of unequal and often forced interaction in the sexual sphere. There are several factors which would act as deterrent to sexual liberties

- (i) The females usually adhere to the traditional concepts and values more closely. As they are actual victims in the case of sexual violence, they would be better prepared to protect themselves, if they knew how to deal with men
- (ii) The fear of pregnancy, the traditional concepts of chastity and desire to wait until marriage will prevent the girls from engaging in sexual relations with their boy-friends. In spite of the freedom between members of the two sexes in the West, a majority of girls in America tend to remain virgin until their marriage. The social sanctions in the case of loss of virginity and pregnancy are much stronger in India and will act as a powerful deterrent to sexual liberties. As ours is a "shame" culture opposed to

* A. D. Ross. *Op cit.*, p. 230

† J. L. McCary. *Op cit.*, p. 205

"guilt" culture,* dishonour which results from the above is a strong check

- (ii) The segregation of the sexes by society deprives the youth of the release of their pent up emotional energies through normal non-sexual contacts. It is widely known that if you suppress something, it comes back with manifold force. Similarly, the young people and particularly boys, react violently to this suppression. They not only act aggressively in the sexual sphere but their aggression also spreads to other spheres of life. We can find this in student unrest and indiscipline. Such a consequence is a logical result of the frustration and is borne out by psychological theories and research†. No doubt frustration caused by sexual segregation is a factor in student unrest. Many a times, the college boys would start an agitation on the slightest pretext just to impress the girls. If they are allowed to know and understand girls, they will not need these crutches. Thus, by removing artificial barriers between boys and girls, we may also reduce the incidence of student protests and unrest.

If the aggression is turned inward it leads to depression. Due to the confusion caused by the inconsistency of sex knowledge the young man or woman may also develop neurotic symptoms e.g. anxieties, tensions, hysteria, obsessive compulsive neurosis etc. The segregation of sexes thus affects the physical and mental health of youth as well as their studies.

- (iii) If there is no segregation and boys and girls meet one another openly, the adults can even supervise them better.

III

At present, no systematic courses in sex education and family relationships are offered by Indian universities. The children collect their information in a very distorted way which makes

* David Reisman *The Lonely Crowd* 1949

† N.E. Miller "The Frustration-Aggression Hypothesis", *Psychological Review* 1941 pp. 337-342

sex a taboo-subject. Because of cultural suppression of this important need, young people tend to develop a distorted picture and behaviour in this area. In a survey of university students in the 60s, it was found that a majority of students did not have proper sex knowledge even at that age and required information on this subject*.

It is necessary that we offer appropriate courses in sex education and family relationships not only in the universities but also in schools. Sex education should begin around the 7th grade in school. These courses will also benefit the parents if they are offered in adult education centres in addition to the regular schools and colleges.

In order to plan a course in the above area and to assess the desires of young people, the counselling departments in schools and universities can be of some help. The counselling department should undertake a survey of all the students to determine .

- (1) The nature and extent of mutual contact between boys and girls
- (2) The nature and amount of mutual contacts they would like to have and their attitude toward segregation of sexes in society
- (3) The nature and amount of their knowledge about sex and distortions therein
- (4) The common questions about sex and about interpersonal relations between males and females

As these young men and women are going to be the future citizens and controllers of the destiny of the nation, they should develop a healthy outlook on life, including sex. They should learn to know each other as partners and peers, rather than mere sexual objects.

The results of these surveys can be used to develop courses in sex education and family relationships which may include the

following topics

- (i) Adolescence and its problems,
- (ii) Physiology of sex,
- (iii) Emotional and psychological aspects of love and sex,
- (iv) The place of love in marriage,
- (v) The relationships between love and sex,
- (vi) Pregnancy its biological, emotional and social aspects,
- (vii) The information about birth control measures and techniques,
- (viii) Diseases associated with sex, their causes and treatment,
- (ix) Child rearing techniques,
- (x) Family as an institution and social interaction in the family

For the guidance of the educationists who would like to develop a course in their institutions, a reading list is suggested*

- *(a) Anthony, Rey *The Teenager's Guide to Sexual Awareness*, 1963
- (b) Bell, R R *Marriage and Family Interaction* 1963
- (c) Bonaparte M *Female Sexuality*, 1963
- (d) Caprio F S , Mozes, E and Dengrove E *Sex Education Library*, 1964
- (e) Chapman, G D *The Feminine Mind and Body*, 1967
- (f) Clark, L *Illustrated Sex Atlas* 1964
- (g) DeMartino M F (Ed) *Sexual Behaviour and Personality Characteristics*, 1966
- (h) Flanagan, G L. *Nine Months of Life* 1962
- (i) Johnson W R *Human Sex and Sex Education*, 1963
- (j) Lloyd C.W *Human Reproduction and Sexual Behaviour*, 1964
- (k) McCary, G L *Human Sexuality*, 1967
- (l) Masters W H and Johnson, V E *Human Sexual Response*, 1966
- (m) Masters, W H and Johnson, V E. *Human Sexual Inadequacy* 1970
- (n) Packard Vance *The Sexual Wilderness* 1970
- (o) Reuben, David *Everything You Always Wanted to Know About Sex*, 1969
- (p) *Sexual Behaviour* (a monthly published by International Publications, Inc., 299 Park Ave., New York)
- (q) *Medical Aspects of Human Sexuality* (a monthly, published from USA)
- (r) *Journal of Sex Research* USA

Some people may argue that the above proposals will result in a permissive environment in Indian universities and consequent decline in morality. I should emphasise here that in all educational efforts in this area we have to emphasise the concept of individual responsibility and clearly point out the place of sex in human relationships. The references which have been suggested for the course are mainly western publications. These should be used by the instructor for his guidance and necessary additions and modifications in the materials should be made to suit Indian conditions. During the course, it should be stressed that the logical place of sex is in marriage and that any other type of relationship whether it is premarital or extra marital is not only against cultural, moral and religious codes of behaviour, but also leads to dire social consequences. The instructor should clearly indicate the consequences of a pre-marital relationship, especially for the girl, i.e., the loss of virginity, the possibility of pregnancy (in spite of all the birth-control measures) and social dishonour. I have discussed this subject elsewhere*.

Even if, in the initial stages, we may find an apparent and, most probably, a pseudo increase in the pre-marital sexual activities, this is a better situation than the one which prevails at present, if adults continue to look at the friendship relations with suspicions. However, if they trust their children, teach them individual responsibility and equip them with proper sex education there is very little likelihood of any serious problem. As the boys and girls learn to know one another as persons with their individual identities, we will find that they would establish companionship relations without any problems arising from such contacts.

We have discussed the problem of the segregation of sexes in Indian society and particularly in Indian universities. We have referred to the harmful effects of depriving the young people of normal companionship relations and have argued that any dangers (e.g. of sexual liberties) resulting from freedom of boys and girls to establish friendship relations is outweighed by the harmful effects of secretive sexual adventures of young people, especially boys, which virtually spoil the lives of numerous young women.

* S.S. Anand "Premarital Sexual Intercourse, *Preet Lari* (Punjab), July, 1971

We have also referred to the relationship between frustration resulting from segregation and student unrest and mental health problems. The rational approach to this problem is not to keep young people apart, but to give them proper sex education and emphasise the need for responsible behaviour in this sphere.

As more and more young men and women study together in institutions of higher learning, work together in the laboratories, offices, workshops and business houses, and participate in the gigantic task of development of national resources, they will refuse to accept the artificial barriers between them. In order to help them to develop healthy and positive attitudes towards each other, we should remove those barriers, which force them to meet secretly and deprive them of opportunities for friendly cooperation.

14. *Women in Indian Universities*

DR. SUSHILA MEHTA

IN recent years, the presence of a large number of women on the campuses of a few big universities in cities like Delhi, Bombay, Calcutta, creates the impression that the Indian universities are fast turning into institutions of women. In many universities the predominance of women in Arts faculties is most pronounced. For example, in Delhi University, of the 1,800 students reading for the M A degree, about 70 per cent are women. Talking about these changes, in the social lives of Indian women, the late Pandit Jawaharlal Nehru once remarked "We talk of revolutions, political and economic. And yet the greatest revolution in a country is the one that affects the status and living conditions of women. It is in so far as our revolution has affected our women that it is basic. I believe it has done so, not perhaps in a dramatic, aggressive way but rather after the old Indian fashion of combining change with continuity. And yet there have been many dramatic phases of this change in our time." With the establishment of sovereign democratic republic of India—that is Bharat—the various processes of political,

economic and social changes which had been gradually emerging in Indian society during the first few decades of the present century, developed a new dynamism. The impact of these social changes was more clearly seen in the social roles, position and outlook of women in modern Indian society. As in Russia, so in India, the political revolution has affected none more than perhaps the women in India. The new Constitution which India adopted in 1950, gave every Indian woman of 21 the political right to vote, to contest elections and hold any public office. Article 15 of the Constitution has laid down that the State shall not discriminate against any citizen on grounds of religion, race, caste, sex or place of birth. Similarly, Article 16 of the Constitution guarantees that women shall suffer no discrimination on the basis of sex in matters of public and administrative services. A number of legislative measures have been passed for restriction on child marriages, widow remarriage, unequal distribution of property between sons and daughters, polygamy and disability of women seeking divorce. Through recent legislation Indian women have acquired equal rights to hold property and get equal pay for equal work.

However, acquisition of rights on paper is one thing but their exercise in day-to-day life is quite another. One has to visit Indian villages and slums in cities to see the glaring discrepancies between the rights women have acquired and their actual living conditions. A discerning observer would realise a number of refined and sophisticated discrepancies even in enlightened Indian homes which he would hardly be able to understand. For the new laws of political, economic and social changes in India are superimposed on a society with thousands of years of culture and a social structure based on the steel frame of the caste system. Through centuries of cultural norms the society had developed strong traditions of male domination and complete subordination of women. For all legal, economic or political matters women had no existence before Independence as free individuals in their own rights. The social status and role of women in traditional society was recognised only in relation to men. The traditional Hindu society granted to women an inferior social status of daughter, wife or mother in relation to men. In such a traditional society, therefore, the question of higher

education for women did not arise. In childhood, girls were to learn their household duties imitating their mothers. There were a few highly learned women in ancient India, but they were so few and far between that they may be treated as exceptions rather than the rule. The large masses of rural Indian women have remained illiterate, ignorant and under-privileged.

In the context of the tradition bound Indian society, therefore, a subject like women in Indian universities would sound like a revolutionary idea. The very inception of the idea of education for women raised up a great controversy at the end of the last century. Even the educated argued against higher education for women declaring that it was a sheer waste of money and resources. Bethune College—the first college for women started in India—was established in 1879, through the efforts of a British missionary lady viz. Miss Mary Carpenter in the teeth of sharp criticism and widespread public opposition. Since then, public opposition hampered the growth of higher education for women at every stage. In the first three decades of the present century, the progress of women's education had remained so extremely slow that it was hardly noticed. Even after three Five-Year Plans, literacy among women increased from 9.3 per cent in 1951 to 12 per cent in 1961 and 18.47 per cent in 1971. What it amounts to is that as late as the seventies of the 20th century, out of every hundred adult women in India, as many as 82 are illiterate.

In the beginning of the 20th century, with its slow pace of industrialisation and urbanisation in the country, all efforts for development of education for girls at higher levels remained slow and halting. Girls' colleges increased from 12 in 1901-02 to 19 in 1921-22 and upto 59 in 1946-47. The number of girls increased from 169 in 1901-02 to 905 in 1921 and 23,304 in 1946-47. To a certain extent, it may be seen from the educational statistics that the tempo of women's higher education increased after Independence. The number of colleges doubled in ten years from 1947 to 1957, the number of colleges for women increased from 59 (in 1946-47) to 113 in 1956-57. In 1951, a special university for women was established at Bombay. It has been named after its founder as Shreemati Nathubai Damodar Thackersey.

Women's University The University is unique in so far as there is no other of its kind all over the world. It caters to the needs of higher education for women in various fields like Arts courses including foreign languages, home science, teaching, nursing and library science. It was in the sixties that progress of higher education for women gathered considerable momentum. There was a ten fold increase in the number of women going to the colleges within the two decades from 1951-60 to 1961-70. The total number of women going to colleges which was 44,942 in 1951-52 reached the figure of 5,43,821 in 1969-70.

Table I—Increasing Tempo of Women's Higher Education

<i>Year</i>	<i>Number of Women</i>	<i>Percentage</i>	<i>Total enrolment excluding Intermediate classes in U P</i>
1951-52	44,942	11.2	4,00,052
1952-53	51,242	11.7	4,39,305
1953-54	59,729	12.3	4,86,393
1954-55	70,571	13.1	5,38,186
1955-56	82,081	13.7	5,99,297
1956-57	95,274	14.4	6,60,544
1957-58	1,05,840	15.2	6,98,357
1958-59	1,23,157	16.0	7,69,588
1959-60	1,37,957	16.4	8,40,815
1961-62	1,69,627	17.3	9,80,380
1962-63	2,00,608	18.5	10,82,666
1963-64	2,30,513	19.5	11,84,697
1964-65	2,67,776	20.3	13,18,227
1965-66	3,18,996	21.4	14,82,773
1966-67	3,64,375	21.7	16,82,012
1967-68	4,21,427	22.0	19,18,972
1968-69	4,77,819	22.3	21,43,264
1969-70	5,43,821	22.4	24,32,630

Coeducation

As may be seen from the above figures that when India became politically independent, the number of girls going for higher education kept increasing by leaps and bounds. However, it was not possible to open up new colleges for women at many places in towns and mofussil centres where girls were residing. Under these circumstances a large number of girls had to join boys' colleges. Out of the total number of 23,304 girls going to colleges in 1946-47, as many as 12,891 had joined boys' colleges. These trends towards coeducation at collegiate level aroused some heated controversies, for the question of coeducation was viewed differently in different parts of the country. In tradition-bound mofussil area the parents regarded the problems of coeducation with grave apprehensions. The delicate situation created by coming together of young boys and girls at a tender age in colleges posed three different problems for consideration of parents, teachers and educational administrators. From the sociological point of view, the bringing together of both sexes at the sensitive and explosive age of youth had many difficult social and psychological implications. In tradition-bound communities in India, where women lived in seclusion and observed purdah, the two sexes were segregated in such a way that men and women lived in two different worlds. Artificial segregation created many problems due to lack of understanding between men and women, inferiority complex among women and double moral standards among men*. The norms and habits of segregation which were also carried into the colleges led to unhealthy curiosity in the minds of boys born out of strangeness and aloofness and rigidity on the part of girls. University campuses suffered from depredations of boys engaged in eve-teasing. The other problems arose out of proximity and mutual attachment of boys and girls and their inability to get married due to restrictions and factors of caste and community.

On the other hand, there were a number of positive arguments in favour of coeducation. Co-education provided natural opportunities for boys and girls to come together, thereby

* This matter has been considered in detail in the previous article on "Segregation of Sexes in Indian Universities."

providing occasions of mutual understanding and respect for one another. Each sex gathers added dignity in the eyes of the other as mutual understanding removes unhealthy curiosity and morbid tendencies of teasing and annoyance. From educational point of view if coeducation develops better adjustment and greater integration of personality of the students it is all the more desirable. Moreover, there are other practical difficulties and especially financial stringencies. Establishing a special college for women requires huge sums of money and funds were scarce in small rural communities. Even the enthusiasts for women's higher education realised that starting special women's colleges amounted to a wasteful duplication of existing facilities already provided for boys. Only in big cities like Delhi and Bombay, women's colleges thrived and established a reputation of their own. In smaller communities, trends towards coeducation have grown and gathered fresh momentum after Independence.

Impact of university education

In recent decades, the very fact that more and more women are taking to university education is in itself a significant social trend. Though the number of university educated women in the country as compared to the vast masses of illiterate rural women is in microscopic minority, the impact of their activities is bound to affect the general ideas and social attitudes towards 'proper place of women' in society. University education has a liberating influence on the position and status of women in the family, the kinship groups and society in general. Some are impressed by the changes in styles in dress, hair-do, fads and poses. These are changes which might be called superficial in so far as they are transitory and do not affect the fundamental social structure of society. On the other hand, a discerning student of sociology and psychology would note deviations of social roles of women which have released socio psychological processes but do not attract immediate attention as no dramatic upsurge herald their onset. However, their impact is far reaching on the basic social institutions. The joint family and the kinship groups which are the two basic institutions of Indian society are vitally affected by these deviations. The impact of the deviations of social roles of women is cumulative and ramifying in the long run.

The cumulative impact of higher education for women on the age of marriage of girls is slow but far reaching. All the fifty "Western Educated Hindu Women" studied by Rama Mehta,* married between the age of nineteen and twenty-five which is considerably higher than the age of marriage of girls in traditional society (14 to 15 years).

Higher age of marriage in turn would affect many other norms and customs of marriage and family life such as the mode of selection of marriage partners, the exogamy of kinship groups, endogamy of caste and sub-caste groups, customs of dowry, bride-price, customs of observing purdah, inter-relations with the in-laws etc. Of the fifty "Western-Educated Hindu Women" studied by Rama Mehta, forty two had arranged marriages but the methods of selection of marriage partners varied and in all cases parents consulted the girls about their choices. Eight women had boys of their own choice approved by their parents. These educated women "realised that they were no longer as dependent on men and submissive to their authority as the earlier generations", says Rama Mehta and she goes on, "these women saw themselves as individuals with views of their own. Basically they did not accept the idea that woman was the weaker sex though they enjoyed being treated as such. They did not put the same emphasis as their mothers did on self-sacrifice and self-effacement, in spite of being reared to value these qualities". This study also revealed that the position of mother-in-law in these families had greatly changed. She was no longer the dominant influence in the family. The fifty respondents unanimously condemned the dowry system as traditionally practised.

Higher education which widens the horizon of women's world and deepens her social consciousness also encourages individualistic attitudes. These new individualistic attitudes are bound to affect the structure of India's large, joint and patriarchal families. The difficulties of reconciling different temperaments due to different levels of education and different levels of western influence and weakened sense of family obligations and lack of faith in cherished values of joint family are reflected in the

* Rama Mehta *The Western Educated Hindu Woman*, 1970

social statistics of family life. It is becoming increasingly a practice in many joint families to dissolve into component nuclear families on the death of the father or both the parents when property is divided, and each son taking his share, sets up his own separate establishment. Fissiparous tendencies in India's large joint families were noticed early by social thinkers who deplored them. The process seems to have been accelerated in the last few decades due to various socio-economic factors. In a sample survey it was found that 78% of working women were against the joint family system. The consequences of the changes in the structure and function of the joint family would be far-reaching on the socio-economic life of the community. There is no doubt that such developments are virtually affecting the social status and social roles of young married women in Indian society. In the traditional joint family, a young married girl entered the house of her father in law at a very tender age with a social status lower than the younger siblings of her husband. She had no voice in the management of family affairs. Sanctified by scriptures and much sung in the folklores of rural communities, the daughter in law role of the young woman was crucial in the family system. It was also a period full of stresses and strains in the life of a young married girl. She was under the exacting discipline of her mother in law who had the dominating influence on the joint family circle. In the nuclear family on the other hand the role of a married woman as daughter in law was greatly modified or even eliminated. A married girl now entered the nuclear family with full rights and responsibilities to manage her family budget and bring up her children according to her own ideas.

The degree of emancipation of women from their traditional roles would depend on various factors such as the educational level of her husband, the economic conditions of the family and the rural or urban habitat of the family. Women with higher education are mainly concentrated in urban areas; they generally belong to richer and higher strata of society or at least middle class socio-economic groups. However, the level of education of the woman herself is the crucial initial factor in most of the deviations of social roles of women as they occur and it might also affect later deviations. The number of those who relapse back into 'traditional roles' would be larger among those women

who could not go to the university. As a group the university-educated women are more emancipated from old traditions and customs, superstitions and taboos. They are more secular and modern in outlook. Most of them do not observe purdah. They generally mix freely with men. Their activities are not always confined to their own homes.

As more and more women enter universities every year, the controversy is gaining ground in regard to the usefulness of various courses and subjects studied by women in Arts colleges. Questions are often asked as to how these courses and curricula help women to play their new social roles efficiently. A system of higher education which was mainly viewed as a process of refinement and westernization for the daughters of the richer and upper classes of society can no longer cater to the needs of the girls of middle classes and lower middle classes. It is being increasingly realised by the parents of middle class families that the Bachelor and Master of Arts degrees obtained by their daughters after years of college education leave much to be desired. Even for the daughters of upper class families the courses in Arts colleges hardly prepare them for their increasingly complex social roles in society. It is for this reason that there is a great rush today for degrees in Home Science and Home Management. Graduates in Home Science have found jobs as teachers and as dietitians and nutrition experts. Even so institutes for training women in the skills which they will be required to display after marriage are sorely needed. Short term courses for the girls from the upper strata of society have recently been started in women's polytechnics to prepare them to play the role of modern housewives and elegant hostesses. Switzerland is famous for such 'finishing' institutes where awkward teenage girls are transformed into elegant ladies. They are taught how to dress with taste, how to walk elegantly, cook delicious dishes, decorate the home, make flower-arrangements, talk about the latest fashions in art and music and devise new modes to entertain their friends with cordiality and style.

Realising the futility of the courses offered in Arts colleges, some courageous modern girls prefer specialised training to liberal professions. Indeed technical professions have posed

challenges to the adventurous young Indian girls. Such professionally trained women are more radical than the women with Arts degrees. For these women have not only absorbed new ideas but also become independent so as to organise their personal and social lives according to modern trends. To the young aspiring Indian girls, professions and careers have provided wonderful opportunities to enhance their social status and acquire added social prestige as useful and valuable members of society. As a result of their professional status they are endowed with competence to defy any attempts to force on them old and traditional norms of social behaviour. They not only demand and get more equitable position in the family and as equal partners in marriage but in addition they have a social status and role as independent personalities outside the family and kinship groups. The needs for trained lady doctors, nurses, teachers, social workers, etc. are so great in modern Indian society that all restrictions and prejudices against women working outside their homes have eroded. Professionally trained women are actually treated with great respect and considered as valuable members of society.

In the beginning it was difficult for young girls to move out of the beaten tracks of their traditional social roles in conservative rural communities. The family norms and even general social climate was not favourable to the young girls aspiring for new careers. But the need for trained lady doctors was great in traditional society suffering from aberrations of child marriages, maternal mortality and child mortality. Due to these crying problems the first profession which attracted Indian women was the medical profession. However, there were no facilities for training in medicine for women in India in the last century. Efforts were made to secure admission for women in men's medical colleges in Madras. It was only in 1875, for the first time, that four women were admitted to men's medical college in Madras. In the eighties of the last century a great agitation was afoot in Calcutta to get women admitted to Calcutta Medical College. However, Bengali public opinion was not yet ripe for such a move. After five years of vigorous agitation, women were admitted to Calcutta Medical College in 1885. Grant Medical College in Bombay started admitting women from 1883. In

1931, there were 3000 women medical practitioners in India. Their number rose to 5,000 in 1941. According to a Health Survey Report, there were 7,000 nurses in 1946.

Table II—Women in Professional Training

Enrolment in Medical Colleges—1968-69

<i>Training courses</i>	<i>Women</i>	<i>Men</i>	<i>Total</i>	<i>Percentage of the total</i>
Graduate	17,713	56,51	73,764	24
Postgraduate	869	3 321	4 190	21
Research	17	93	110	15
Diploma/Certificate	875	2,263	3 138	28

Though nursing is the most humane and healing profession, socially it has not acquired prestige in India like other professions. There are about 200 nurse training centres in India which admit nearly 3000 students every year, yet nurses are generally in short supply. Degree courses for nursing are provided in the College of Nursing, New Delhi, S N D T College for Women, Bombay, and the School of Nursing at Christian Medical Hospital, Vellore. The College of Nursing and the General Hospital, Madras, provide combined courses in nursing, administration and teaching in schools of nursing. On the other hand, the All India Institute of Hygiene and Public Health (Calcutta) conducts training on Public Health nursing. In spite of various facilities provided, nursing has not acquired much popularity among young Indian girls. Only girls from poor homes and minority groups take to nursing.

There is no difference of opinion between the educationists of the east and the west regarding the view that education of children, both boys and girls, should be entrusted to women who are by nature endowed with three major qualities essential for teaching viz. 'the desire to teach, something to teach, and sympathy with the young'. However, according to statistical

figures women constitute only 21.7 per cent of the total teacher-population in the recognised schools in the country. According to the Second Educational Survey which was conducted in 1965-67, out of a total number of 19,09,187 teachers working in primary, middle and secondary schools in rural and urban areas, only 4,14,733 were women while 14,94,454 were men. Out of these 4,14,733 only 3,19,192 were trained women teachers while 95,541 were untrained. Moreover, the proportions of women teachers at primary, middle and secondary levels also vary considerably. The largest number of women are concentrated in the primary school. The second largest number is to be found in middle schools. Very few women are working in colleges and institutions of higher learning. Out of the total number of 4,14,733 women teachers as many as 2,68,136 are teaching in primary schools, while 95,818 work in middle schools and only 50,779 are found in secondary schools. At the primary stage while 2,03,849 are trained women teachers, 64,287 are untrained. In middle schools while 75,898 women teachers are trained, 19,920 are untrained. In secondary schools 39,445 women teachers are trained, while 11,334 are untrained. In spite of all the recommendations of various high power Commissions urging greater recruitment of women teachers both in rural and urban areas, the position has hardly improved.

Although the emergence of social work as a separate profession requiring high level training is recent, institutions for training of social workers have already been established all over the country. Delhi School of Social Work was established in 1949, while the Tata School of Social Work started postgraduate training for social work in 1951. By 1970, there were twelve postgraduate schools of social work and departments of universities in different parts of the country. The training imparted in some of these institutions is often based on social work methods developed in USA as many of the staff members have been trained abroad. However it is being increasingly realised that with growing urbanisation and industrialisation, social problems are assuming alarming proportions. Trends in juvenile delinquency, beggary, prostitution, destitute women and refugees pose new social problems crying for unorthodox solutions. They need new approaches keeping in view Indian conditions and resources. The

schools of Social Work have yet to develop a cadre of dedicated social workers who can face a challenge of such a vast population. As a social worker said, "No amount of training can help if you lack the spirit. Training is only second to your depth of feeling and dedication." Schools of Social Work have yet to develop indigenous methods which are less costly and which can deal with these problems more effectively.

Law is another profession in which girls have started taking training in recent years. As early as 1892, Miss Cornelia Sorabji had the distinction of being the first Indian woman to qualify for the degree of Bachelor of Civil Law at Oxford. In spite of restrictions on the practice of women lawyers, many women joined law colleges and secured law degrees, which till recently remained academic ornaments. In 1923, a vehement agitation was started for removing disabilities of women for practising law. The Govt. of India passed "Legal Practitioners Act" in that year to remove the disabilities of women for joining the legal profession. During the first four years (1923-27), six women were enrolled as lawyers in the country, three from Bombay, two from Madras and one from Assam. As there are no women's law colleges, they study in men's colleges. Even in England, four Inns of Court were closed to women till 1920. In 1923, one of the first two women, who were called to the Bar from Lincoln's Inn was an Indian—Miss Mithan Tata—who practised at the Bombay High Court from 1924.

Table III—Enrolment of Faculty of Law—1968-69

	<i>Women</i>	<i>Men</i>	<i>Total</i>
Graduate	1,777	46,150	47,927
Postgraduate	49	1,027	1,076

"It is a tough profession in terms of sheer working hours", says an eminent woman lawyer of the Supreme Court. A lawyer has a ten to twelve hours working day. Law is one of the more taxing professions and few women have the stamina to cope with it. Many girls who study law end up as labour officers or welfare

officers, for women lawyers have to face many social prejudices "We have to work twice as hard as our male colleagues in order to set up a reasonable practice", said a practising woman lawyer. At present, there are about 300 practising lawyers in the country and a handful of lady magistrates. They are mostly concentrated in big cities like Calcutta, Bombay and Delhi. It is interesting to note that a very large percentage of women lawyers are not married.

A number of women have entered the field of science, engineering and technology, but their number is not impressive considering the needs of a developing society. A rough estimate of women in science gives us the following figures for 1970-71.

Table IV—*Women in Science*

<i>Category</i>	<i>Number of women</i>
Science graduates	48 000
Science postgraduates	12,000
Engineering & Technology (Degree)	1 300
Engineering & Technology (Diploma)	1 200
Medical graduates (Degree)	20 000
Medical (Licentiates)	2,600

More than 60 per cent of women science graduates take to teaching in schools compared to about 25 per cent of male graduates. Of the working women holding postgraduate degrees in science, more than 50 per cent take to lecturing in colleges. It may be noted that scientists—women as well as men—are not engaged in technical or research work in industries or factories or farms. Of women science graduates in employment, barely 10 per cent are engaged in technical work compared to 30 per cent of male graduates. Of the postgraduates in science, 20 per cent of women and 30 per cent of men are employed in industrial and other technical undertakings.

There are some who are sceptical about the work of women as scientists. Quite often questions are asked. Should women scientists aspire to get employment when men are unemployed? If one studies the work of women in this field, it will be clear that it is not a question of competition of women with men in the employment market. What we must fully realise and recognise in actual practice is that women scientists have a special role to play in research and practice, particularly in certain fields like teaching, health, medicine, family planning, psychology, sociology and social work, home-science, diet, nutrition etc. Considering the responsibilities of women as housewives, provision for part-time work for them has to be made. In view of the fact that eight to ten per cent of the country's scientific and technical personnel are women and their number is growing, all efforts have to be made to utilise their services in teaching, industries and services. Otherwise it would be a huge national wastage if they have to remain idle because part time work is not available.

Some old time administrators, who have seen the British era, are greatly impressed by the considerable enrolment of women in higher education and employment in various professions and vocations. They see her in the office. They see her in the bank, in the post office, in shops, in clubs and restaurants. Except for driving a railway engine, women have infiltrated into every other profession under the sun. There are women pilots, harbers, librarians, journalists, block development officers, development commissioners, under secretaries and joint secretaries. But in terms of sheer statistics, their numbers are not impressive in skilled professions requiring high level training. As compared to the huge army of women employed in unskilled work like domestic services as household maids or *aiyars* and agricultural labourers, the number of women in high positions of business executives or administrative officers is very small indeed.

Before Independence women were conspicuous by their absence in all administrative services at all levels whether it was national, state, district or village. Women were not permitted to appear in ICS or IRS examinations because administrative services were considered a man's job. A few women joined medical services or educational services at lower levels. After Independence the

Government of India allowed women to enter competitive examinations. The first woman to take the IAS examination and enter Indian Administrative Service was (Miss) Anna George in 1951. In choosing a career she picked on IAS as she felt there is no reason why women would not be able to handle jobs which are traditionally assigned to men and hence known as "man sized jobs".

(Miss) George insists that women entering IAS should take their obligations seriously to establish a reputation as good administrators. It is possible that IAS being a man's world, sometimes a woman officer may be taken for granted or her claims for promotion may be ignored. Even if she gets a promotion, her male colleagues may raise their eye brows and ask in low tones 'Is she worth it?' Promotion or no promotion a woman officer has to establish a good reputation. (Miss) George says, 'if you do your job well, you will be respected'. She is now working as Joint Secretary in charge of personnel in the Ministry of Home Affairs.

Though the number of women IAS officers is rather small, they have established a reputation and opened a new sphere of useful public service. In 1970, two women topped the list of successful IAS candidates. At present there are about 2,090 IAS officers out of which about a hundred are women. This works out roughly to five per cent. It is a very poor ratio considering the sex-ratio in the country as a whole. Generally it is found that in all high positions, the number of women is very small as compared to that of men. Their proportion is increasing in lower grades of Government services, women are seen working in post offices, telephone exchanges, telegraph offices, railways, information centres, civil supplies, printing firms, banks, financial corporations etc., in the capacity of clerks, typists, stenographers, assistants, and personal secretaries. Recently some women have been appointed in the Police Services and a few in Foreign Service. Their number is the lowest in defence and diplomatic services.

After years of struggle and dogged perseverance women have made progress to catch up with men in various fields of higher education and in professions like medicine, education, law and administrative services. Business, however, has remained a man's world and women have not been able to make inroads in this

field. A few adventurous girls have taken up courses in commerce. In 1968-69, 6,523 girls enrolled in commerce colleges. After taking a commerce degree, however, many of these girls end up as accountants, clerks, book-keepers etc. Big departmental stores employ a large number of sales-girls. A number of women are engaged in small trades like sale of luxury goods, cosmetics, toys, bangles, curios, etc. Training in catering can be very useful as a number of women are required for hotels and restaurants.

Women are coming up fairly well in their own in all fine arts whether as professionals or as amateurs. Whether it is painting or commercial art, music or singing, dancing or dramatics, radio or T.V., more and more women artists are coming to the forefront. Women have also entered modern film industry as actresses, artists, and choreographers. Some of them have created a name for themselves in films and enjoy privileged positions.

Table V—Number of Girls Enrolled in 1968-69

<i>Type of college</i>	<i>Number</i>	<i>Percentage</i>	<i>1967-68 percentage</i>
Arts	2,98,311	32.6	32.6
Science	1,27,376	19.2	19.0
Commerce	6,563	2.8	2.5
Education	18,459	38.0	37.9
Engineering & Technology	1,129	1.1	1.2
Medicine	21,729	24.0	24.4
Agriculture	155	0.6	0.6
Veterinary	143	0.7	0.7
Law	1,835	3.7	5.1
Others (Music, Fine arts etc.)	2,222	46.0	46.6
Total	4,77,922		

In this industrial age, the two glaring features that differentiate the Indian working girls vitally from the working women of western countries are their complete lack of any kind of mechanical

skill and absence of any training to handle jobs in modern industrial production. Educational facilities for training in liberal professions are limited and admissions are difficult. To acquire degrees in one of the modern liberal professions takes many years of study. Moreover, the cost of the training is so high that lower middle class families cannot send their girls to such institutes. Young girls from middle-class and lower middle class families who have now started going to high school have also become more and more conscious of career-oriented education. But short term training for specialised jobs is sadly missing. The few industrial institutes and women's polytechnics offer a few courses in commercial arts, secretarial work, library science etc. But they do not cater to the needs of women who work in factories requiring mechanical skills and technical training.

The demand for jobs and also job oriented education is growing day by day. The live registers of employment exchanges reveal some harrowing figures. As many as 425 women scientists with postgraduate degrees have no jobs and are seeking employment along with over ten thousand science graduates and 21,411 arts graduates. Altogether as many as 3,56,027 women are looking for jobs through the employment exchanges all over the country.

A sociological study of the emerging roles of women and their economic conditions point to the crying need for radical changes in the system of higher education to satisfy the needs of women in modern India. The concept of university education for women as a process of refinement and elegance is obsolete. University degrees as ornaments added to the names of elegant ladies no longer fascinate them. The whole philosophy and process of women's higher education will have to move out of the old traditions to develop radical approaches. It has to devise new courses and curricula to suit the new social roles of women in a modern and industrial society. As the old agricultural society transforms itself gradually into an industrial society, a whole vista of new vocations, skills, occupations and exciting careers open up before women in different walks of life. Already there are adventurous and spirited girls who are entering new and developing vocations like air-hostesses, receptionists, journalists, tourist guides, telephone-operators, models, choreographers, beauticians, etc. Professional

or technical training for these women would help them in improving their prospects

It is vital that higher education for women should be diversified and restructured on vocational lines. However, the process of vocationalisation of education for women would need a wide vision and would ultimately open a spectrum of possibilities in an industrial society. It would need imagination to see far into the future for new trends and developments. The vision to see the emerging social roles which women could play in industries, distributive services, arts and crafts and to gear women's education to these needs would require a process of socio psychic amalgamation. It would require not only institutes of special training in various vocations but it would also mean provision for vocational guidance for women to choose their careers and successfully develop their interests, aptitudes, and skills in their new social roles.

15. *Science Education and Research*

M.P. BALAKRISHNAN

THERE is a growing awareness everywhere that for the betterment of society, the application of science and technology has to catch up in all spheres of life. This will be realised if only three things are made possible. Firstly the vast mass of the people who ultimately decide the pattern of society should have enough science in them to discharge their functions intelligently. For this, it is not necessary for all people to become scientists or technologists. It is adequate if people are enabled to make an informed use of the fruits of science and technology. This would be possible if a greater place is accorded to science subjects in the curricula for children to have science based education and the growth of mass media is ensured to disseminate scientific and technical news among people in a big way. Secondly the people who have the power and the authority to take decisions in government, industry and society at large, should possess adequate science in them to discharge their responsibilities properly. They must

know to what extent scientific knowledge can be made use of in their respective fields. This should be made possible if necessary by the deployment of the needed types of scientists to assist them or even to replace them. Thirdly the working scientific and technical personnel should rapidly and continuously develop science and technology suited to the felt needs of the country and pass on the fruits of their researches for effective utilisation at the appropriate places, thereby making science a real instrument to create wealth and power. All these speak of the urgent need to develop science education of all kinds, at all levels. This obviously takes us to the task of examining the science policy that is being pursued in this country.

A national science policy for any country is still relatively a new field of responsibility for governments. Yet there is at present a near revolution in the teaching of science which is manifest in several countries. Fortunately for India when the freedom came in 1947, Shri Jawaharlal Nehru already knew the paramount importance of science and technology in the reconstruction of modern India and the stage was immediately set to evolve a scientific temper in all activities. In Nehru's own words, "the future belongs to science and to those who make friends with science." India's Parliament under his guidance passed in 1958 the scientific policy resolution which created the necessary climate and resources for science. The policy was announced with a view to developing science at a rapid pace. This policy *inter alia* proclaimed that the aims of Governments' scientific policy would be to foster, promote and sustain by all appropriate means, the cultivation of science and scientific research in all its aspects—pure, applied and educational. It is intended to secure for the people of India all the benefits that can accrue from the acquisition and application of scientific knowledge. The policy statement of the Government, no doubt, is an explicit recognition of the role and importance of science and technology in the affairs and progress of the country. To give concrete shape to this policy has been, however, no easy task. Nevertheless a great beginning was made by the government to implement this policy.

Progress of implementation

A large number of institutions have undoubtedly been set up

by the Government in furtherance of the scientific policy. The Council of Scientific & Industrial Research has now a chain of 30 national laboratories/institutions to its credit with 11 cooperative research associations set up in collaboration with industry. They cover fields like chemicals, instruments, petroleum, leather, metalurgy, fuels, food, oceanography and the like and it is establishing itself as an application-oriented organisation with its programmes and projects. Its efforts to bring laboratories and industries closer to each other have begun to bear fruit. More than 200 problems sponsored by the industry are now annually investigated by its laboratories. Over 100 processes could be released to industry for utilisation in 1970. It is gratifying that this national organisation is showing signs that it can play a significant role in helping industry to become increasingly self-reliant.

The Atomic Energy Commission with its 'growing science' method of working has already made its impact felt. The workings of laboratories like Bhabha Atomic Research Centre, Space Science and Technology Centre are all guided by the Department of Atomic Energy. The Defence Research and Development Organisation set up in 1958 is organising design-oriented research with over 30 laboratories dealing with armaments, electronics, instruments, materials etc. The Indian Council of Agricultural Research is engaged in agricultural research, extension and teaching work in agricultural sciences with the help of new research institutes and the agricultural universities set up in different states. Similarly in the field of medical research, the various institutions under the Indian Council of Medical Research and Ministry of Health are undertaking research, development and extension programmes. Survey organisations of the government like the Survey of India, Botanical Survey, Geological Survey of India, Zoological Survey have all been activated with projects under implementation in different regions of the country for mapping the natural resources of the country viz., its minerals, flora, fauna and water and a good deal remains to be done in this vast field. The Central ministries have also set up several new institutions for investigational purposes. In the year 1970 there were 67 research institutions functioning under various central ministries. These are, besides, the 30 National Laboratories and the 11 industrial research associations of the CSIR, the 34 research

establishments of DRDO, the 26 research institutions functioning under ICAR, 6 under ICMR and 8 under the Deptt. of Atomic Energy. They also do not include the various science departments of the 85 universities with its 17 centres of advanced study in science subjects.

The above indicates the extent of scientific research that has been organised in different fields.

Benefits of scientific policy

The scientific policy was aimed "to secure for the people of the country all the benefits that can accrue from the acquisition and application of scientific knowledge". The research activities of the institutions had, no doubt, been colivened after the adoption of the scientific policy in 1958. It is too early for any one to be able to measure the benefits. Many of these institutions are still facing innumerable difficulties for want of resources—men and materials. Yet the achievements are not meagre by any standards, though there is scope for improvement almost in every field. The country has now a high research potential in chemical, mechanical and civil engineering, aeronautics, electronics, metallurgy, geophysics, coal, petroleum technology, ceramics, and silicate technology. A large number of processes and products have entered the commercial market proving, if proof was required at all, that research will lead to economic development. We can see in Hyderabad a unit producing smokeless fuel for domestic use from non-coking coal which this country has in plenitude. A number of firms have received the technical know-how of producing on exchange resins. The country has seen how the optical glass plants are now meeting the entire needs of our people. Know-how for many chemicals like vitamin C, potassium salts, benzyl derivatives have been developed by our scientists and released for commercial use. The processes developed indigenously in the field of electronics have led to the production of mica, ceramic capacitors, ferrite rods etc. The country is now in a position to market a number of protein rich foods like high quality baby food. Indian industry is at present using different types of machines required by the cable industry, all developed by our scientific and technical personnel. For crude oil gathering stations complete domestic engineering design is now developed by ONGC's technical people. The bulk

of the variety of items of equipment needed for oil exploration and production is now made indigenously. Process development work in respect of the manufacture of a number of items like benzoic acid and sodium benzoate by National Chemical Laboratory or cyclohexane from benzene in Gujrat State Fertilizer Factory or selected styrene polymers and copolymers by Sri Ram Institute for Industrial Research are the results of fruitful research in the petrochemical field. The manufacturing technology of a number of drugs has been improved by our IDPL and Hindustan antibiotics. NCL has been able to develop a technology for the manufacture of vitamin C which will now enter the market soon. The FCI has started production of zinc oxide catalyst, naptha reformation and methanation catalyst and low sulphur H₂T conversion catalyst and LT co-conversion catalyst paving the way to produce these important catalysts costing annually nearly Rs. 3 crores for manufacturing fertilisers. The possibilities of industrial research are thus immense for increase in India's wealth.

The significant achievements in the field of atomic energy are well known. India can now construct on its own atomic power stations. The country is already self reliant in uranium resources. The export of minerals, rare earth products and thorium has already earned more than Rs. 5 crores in foreign exchange. It is now possible to manufacture indigenously electronic components and equipment of high quality and the production has already exceeded Rs. 3 crores. Radio isotopes are manufactured by us both for domestic use and export. The Department of Atomic Energy has also to its credit techniques developed for food preservation and grain disinfection with atomic radiation. Above all the country has achieved capability of many applications involving electronics and other technology so vitally useful for defence purposes. This underscores the real progress that is discernible if scientific programmes are developed in a big way. The philosophy of the distinguished scientists Bhabha and Sarabhai based on 'growing science' has led to the growth of science in the fields of atomic energy and space research.

The benefits arising out of surveys are also not insignificant though various reports indicate a number of shortcomings like duplication, overlapping, wastage of resources, lack of coordina-

tion and execution of projects of very low priority. Yet it must be admitted that they yield good dividends e.g. the geological mapping of the country by G.S.I. resulted in an increase in mineral production particularly coal, iron ore, lead and copper ores in the country.

In the field of agriculture it is common knowledge now how improvement in crop production has been achieved and the contribution of research has been very significant for such an improvement. It has been calculated that the net addition to national product for the year 1968-69 from the high yielding variety programme in an area of 810 lakhs of acres which is just 10% of the total area under cereals has been Rs. 760 crores—the cost of 157.4 lakh tons additionally produced. A number of similar examples like the new multi-cropping programme can be added to show the usefulness of research to increase agricultural production. New agricultural technology has thus become a major input of agricultural production and thanks to the organisation and development of agricultural research and its application, there has been a big spurt in production, signalling the significance and importance of institutions like the agricultural universities, National Seeds Corporation and extension centres which will facilitate increased production through improved techniques and methods. Similar benefits have also accrued from food research. As a result, several commercial products have been developed for producing protein rich foods like multipurpose food, nutri-biscuits, pre-cooked weaning food and blended *atta*.

Significant achievements have also come from medical research in the country which has successfully eradicated plague and malaria. Technical know how to control small pox, cholera and enteric fever has also been developed to a considerable extent and the very pattern of out-break of infectious diseases in the country is changing, our medical scientists have succeeded in effectively controlling many diseases of bacterial origin.

In the field of defence research, while details should continue to remain as classified information, we can draw solace from the fact that a number of research projects has added to the country's indigenous capacity to develop new weapons and to reduce coun-

try's import bill substantially. The improvements brought about by the R & D wing of All India Radio, C W P C, Central Board of Irrigation, R D S O of the Ministry of Railways also point towards the constant and continuing use of research.

Handicaps

When the overall impact in the country is taken it would however be realised that what has been achieved is just a drop in the ocean if economic development and banishment of poverty is the task that the country has assigned to science and technology. Indeed it is so, a careful reading of the scientific policy resolution would bear testimony to this.

If the impact is inadequate the reasons are not well considered, the main reason which is very often pointed out is the very low level of investment on research and development in the country. Every one connected and concerned would point out that the R & D expenditure was only 0.21% of the GNP in 1958-59 which in 1969-70 has gone up to 0.43%. In other words we spent Rs. 27 crores on R & D in 1959 and this has gone up to Rs. 136 crores in 1969. But this sum of Rs. 136 has come out of the GNP (at current prices) of Rs. 31,733 crores. In terms of central budget the R & D expenditure has increased only to 3.2% from 2.4% in the same period. This is in spite of the recommendation of the CASTASIA Conference held in 1968 addressed to Governments of all developing countries to increase their R&D expenditure to the level of 1% of GNP during 1968-69. Japan has also been able to provide 1.5% of its GNP on R&D since 1964. U.K., USA and USSR are providing 2.3, 3.4 and 2.5 per cent of their respective GNPs or more since 1965. It should unhesitatingly be conceded that our R & D expenditure is woefully low. But in the same breath we should ask another uncomfortable question. Are we getting results commensurate with the scale of investments, however small it be? On the one hand it should be remembered that R&D expenditure in India is still a government affair. About 94% of the R&D expenditure in India is met only to the extent of the remaining 6%. Out of the Rs. 136 crores spent on R&D in 1969-70, the private sector could find only a

little over Rs 8 crores. In Japan the contribution by government is just 26% and the rest is found by industry and others. While in the U.K. the Govt. contribution is about 2/3rd of the total R&D expenditure, it is about 60% in U.S.A. The non participation of the bulk of the industry is one reason for the inadequate impact of the R&D programmes already under implementation. The five major organisations which account for the bulk of R&D projects are the CSIR, Deptt. of Atomic Energy, Defence Research & Development Organisation (DRDO), ICAR and ICMR. The Committee on Science & Technology is already studying the deployment of resources in these organisations and there is no doubt, some better results could be expected from such studies by competent scientists. It is very likely that inside the imposing buildings many of our scientists are not able to switch over to new methodologies arising out of the addition of new areas of knowledge. If there are institutional devices to keep pace with the rapidly developing technology, and to introduce innovations instantly there would be real development. Otherwise there would not be any dearth of excuses for lack of results.

It has been pointed out by many knowledgeable persons that there is wastage of resources in the research projects already in progress. There is as yet no attempt to identify projects which would yield results within a specified time. Projects which could have been conveniently deferred should be identified.

Scientific man power

It is rather surprising that we are in this predicament in spite of the fact that in 1968 we had as many as one million scientific and technical personnel in the country at the graduate & post graduate level. This figure was only 3.84 lakhs in 1958. By any standards this has been a remarkable achievement.

It is learnt that out of these one million scientists only 62,000 were engaged in R & D programmes in 1968-69 and the five major research organisations of the government accounted for nearly half of them. While the research programmes of universities accounted for nearly 8,000, over 20,000 were engaged in other departments of the government at the Centre and in the States. The private sector had a little over 2,000 scientists as their share.

Total Strength of Scientific & Technical Personnel in India*

Total Strength of Scientific & Technical Personnel						
	Graduate		Post-graduate		Total	
	In thousands					
	1958	1968	1958	1968	1958	1968
Natural sciences	140	349	40	114	180	463
Agricultural & Veterinary	16	58	3	10	19	68
Engineering & Technology	62	192	52	156	114	348
Medicine	35	27	36	79	71	106
	253	626	131	359	384	985

As the statistics indicate, the country has adequate stock of scientific and technical manpower to take the country forward through the application of science and technology. This is in spite of the fact that about 30 000 scientists have already migrated mainly to USA, UK, Canada and West Germany, most of whom are either doctors or engineers or scientists or technologists. This is really undesirable as the country should be in a position to prevent their migration by organising suitable working conditions in the laboratories or centres where they work. It is certainly a bad policy to produce scientists at considerable cost mainly out of public funds and then allow them to leave the country when they have completed their first and second degree courses. It is understandable if they are allowed to go abroad to continue their work in a field where it may not be possible for the country to provide the required facilities, for a length of time. Scientific and technological growth can come only from scientists and technologists of calibre and quality. It is this question of *quality* in the quantity produced by our universities that a close and immediate examination is called for.

The growth of enrolment for the last twenty years in universities and colleges in science has resulted in an eight fold increase in numbers which is indeed impressive by all accounts. In the case

of engineering and technical education the growth of enrolment has also been more or less eight fold as is shown below :

	1950-51	1955-56	1960-61	1965-66	1970-71
Total enrolment	3,96,745	7,12,697	10,49,864	17,28,773	31,12,404
Science enrolment	12,7,168	1,97,475	3,02,700	5,65,254	10,34,563
Enrolment in engineering and technical courses	12,094	19,899	45,389	85,555	1,05,831

There are today in colleges and universities more than one million science students. But at the postgraduate level this number is 37,865, the enrolment having trebled in ten years' time. The number of researchers in science has at the same time doubled, increasing from 1929 in 1960-61 to 4042 in 1970-71 which is normally considered an encouraging trend.

The position of enrolment of students of engineering and technical institutions has been more spectacular at the postgraduate level—the enrolment has increased six-fold when it rose from 658 to 4053 in the last decade. The same trend has been unmistakably maintained at the research level where the enrolment has registered a phenomenal increase to 518 from 75 during the last ten years.

The same encouraging trend has been kept by the science teachers in colleges and universities. This number rose from 6008 in 1950-51 to 40,482 in 1970-71. In the case of engineering teachers corresponding increase has been from 1227 to 8122 in the same period. The annual output of scientists at graduate level is increasing at an annual rate of 10.5%. From 11,087 in 1952 their number rose to 49,769 in 1967. At the postgraduate level the corresponding growth has been from 1769 to 9255. At the research level as against 130 in 1952, the output was 1050 in 1967. In technology

while at the graduate level the output has risen from 2300 to 14,383, at the postgraduate level the output has increased from 94 to 640

Such a large increase in enrolment and output of scientific and technical personnel has been possible on account of the impetus that has been afforded for the promotion of science and technical education at the university level. Nearly 1/3rd of the total enrolment for higher education is accounted for by science students which had been the position even 20 years ago. This pattern has not changed in any significant way.

While the big expansion has produced more than a million scientists in 10 years' time, it is doubtful whether many of them have had any purposeful science education as envisaged by the Education Commission. The Commission has no doubt emphasised the point that standards of attainment of postgraduate students and research must bear international comparison. It also rightly called for a very high degree of efficiency in the institutions of the country's scientific manpower and wanted the courses of study to be organised, based on priorities in relation to the needs of development. The need to revise drastically the undergraduate and postgraduate curricula was stressed in unambiguous terms. Regional imbalances in the development of science education that were noticed were to be rectified and even courses had to be organised on the basis of demands. The necessity to make science education workshop and laboratory based was strongly stressed and a recommendation to the effect that every college and university department should have a workshop attached to it has been made in the report with a view to encourage students to learn the use of workshop tools and get acquainted with laboratory techniques and practices. The Commission had observed how, 'the objective, content and methods of science teaching had not changed in keeping with the growth of science'. It therefore, admitted that "the gulf between what is taught and what ought to be taught goes on widening". Students are not very much attracted to science for the reason that it is taught in many cases by poorly qualified teachers with practically no help or little help from the badly equipped laboratories. The syllabi are also overcrowded and outdated and as the courses have to be completed

within a fixed duration there is also hardly any sufficient time to arrange demonstrations with the available laboratory facilities. Improvements at undergraduate and postgraduate levels are needed in terms of "good teachers, good books, good journals and good equipment". In many universities and colleges for many courses the postgraduate syllabus is "just a repetition of the undergraduate syllabus with emphasis on more detailed courses". Individual needs and aptitudes of students are hardly taken into any account.

Research

"A collection of the research topics in various science subjects which have been accepted for the doctorate degrees in the bulk of the universities is a curious mixed bag and if one were to pick at random, one is most likely to meet with a topic which by its very enunciation and the scope would be considered to be behind times by at least ten to twenty years." This was the well considered opinion of the task force on science education and research appointed by the Education Commission to assist in its work. This happens because problems are given to and not selected by the researcher on the basis of his ability and facilities available. Many topics, as a result, do not belong to the scientific forefront and the topics chosen in many cases do not reflect a modern contact or approach and are also not in terms of the felt needs in their respective fields. No wonder, therefore, that the Education Commission also came to the conclusion that "a major weakness of Indian education and research is the relatively very small part played by universities in the sum total of Indian research which itself is far smaller than what it should be in relation to our capabilities and needs." There are no doubt, some useful research activities undertaken by university science departments which are mostly fundamental, though applied research is also carried on to a smaller extent. The point that some important research work is being done in the 17 centres of advanced study has been acknowledged by eminent scientists both in the country and abroad should not be forgotten here. The Commission in its report has laid stress on the fact that a stage has now been reached in the country when deliberate support and encouragement of advanced study and research in universities should be a fundamental

goal of our national policy. The Commission believed this as a major step in building up new talent in the country. A call has, therefore, been addressed to students and teachers that more and more research of a better and still better quality should be undertaken by them, be it pure basic research which advances knowledge or applied research where the object is clearly envisaged in terms of a new plant, process, product or service or objective basic research which will provide knowledge on which technological advances can be based.

Science climate

The Government of India in its policy statement of July 1968 laid emphasis on the development of science and technology, and declared that "science education and research should receive high priority" with a view to accelerating the growth of the national economy. It has further proclaimed that science and mathematics should be an integral part of general education till the end of the school stage. This is indeed the sort of policy that should be implemented vigorously so that people will have adequate science in them. Right climate will be created if science becomes in reality an integral part of general education.

There are at present nearly a hundred million children in schools, colleges and other educational institutions, the bulk of whom are in schools only, and to usher science therein is a gigantic task. But the difficulties are only serious but not insurmountable for a nation with a will.

At the secondary school level, 42% of the schools in rural areas have an enrolment of less than one hundred only and there are more than 26,000 secondary schools in the country. 14% of these schools are incomplete. About one third of the secondary schools have no laboratories at all and the majority of laboratories—less than 10%—are found in the rural areas. As many as 90% of these schools have mother-tongues as the media of instruction, and the rest either English or two media each.

Of the two million school teachers, the academic qualification of more than 6 lakhs of them is only Middle pass or less. At the

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Of the two million school teachers, the academic qualification of more than 6 lakhs of them is only Middle-pass or less. At the

Middle stage only 15% are graduates. At the secondary stage over 75% of the teachers are graduates and the remaining 25% are matriculates, these are not evenly distributed. Over 65,000 teachers are teaching science subjects in the schools and their academic qualifications vary from 'matriculation without science' to 'Master's degree in science'. Only 20,254 of the science teachers had 'science' qualifications and training in methods of teaching science, with the result there is not even one fully qualified science teacher in every secondary school. The irony of the situation is that only 3/5 of the time of even these qualified teachers is available for science teaching.

At the college stage also the general situation is not at all reassuring. More than 60% colleges have an uneconomical size of less than 300 which promises no academic viability to upgrade the courses. A sixth of them, mainly in rural areas have only a strength of less than 100. The uncontrolled proliferation of these institutions to meet the local demand for higher education has added to the problem of such substandard colleges.

It is not that programmes have not been taken up to promote science education. More than Rs 13 crores have been provided in the current plan allocations to be spent on programmes of science education at school level. It is realised that improvement of science education at the university level will be possible only if the base at the school level is suitably strengthened. The problem of improving school science has therefore to be the concern of the nation to create a body of competent and devoted scientists.

The University Grants Commission has launched a series of *programmes to improve science teaching at the undergraduate and postgraduate levels*, grants are placed at the disposal of colleges and universities to construct laboratories and procure the needed equipment. Purchase of books and journals is now a core programme of the Commission. Summer Institutes are organised "to introduce science teachers to the growing frontiers of scientific knowledge and to the new methods of teaching that are being developed in the teaching of science. The establishment of centres of advanced study by the Commission has proved to be a real encouragement in the pursuit of "excellence and team work in

studies and research and to accelerate the accomplishment of international standards in specific fields" The assistance extended by the Commission has enabled these centres to enlist the services of competent and promising teachers and researchers apart from procuring the needed sophisticated items of equipment. These centres are functioning on an all-India basis and are expected to operate as 'breeders of more such centres in the future'—excellence breeding more excellence. Action is being taken by the Commission with the help of experts for curriculum reform and examination reform.

We have thus seen how the programmes of science education and research have had little impact as yet and we are awaiting a revolution in science education. A large number of useful projects are under implementation by different agencies but there is hardly any real coordination or collaboration among the implementing agencies. Time and again, suggestions have been made that universities and national laboratories should cooperate and collaborate in projects. The national laboratories have made a beginning by establishing collaboration with industries. But the universities are still to join as partners in the real sense. What to speak of coordination among different implementing agencies, even the universities are finding it difficult to collaborate at the regional and national levels in cooperative programmes and supplement their mutually available facilities particularly in post-graduate teaching and research. It is at that level that cooperative programmes cutting across State, regional and language barriers, have to catch up, achieving thereby the much needed national integration and above all the much needed academic mobility.

It is high time universities took up leadership and did all that is necessary for improving the teaching of science subjects in their departments and colleges affiliated to them. New projects like science museums, general laboratories and workshops have to come up in universities on a big scale, so that students are able to work with their own hands on worthwhile projects which the universities have to identify and implement. It is necessary for universities to commission "special teams of instrumentation technologists to engage themselves in the creative enterprise of rigging up, patenting and industrialising essential equipments with indi-

genous raw materials. These technologists should train large numbers of technicians to be employed in schools and colleges." It is again for universities to have the necessary machinery to ensure that the basic question of scarcity of equipment and books is met and met without any loss of time.

"The right climate, leadership and dedication are the important factors in promoting team work and in generating scientific work of high quality"—the Education Commission rightly says. But the right climate can come only if working is based on "growing science" as adopted successfully by the Department of Atomic Energy. The philosophy behind "growing science" is to support ability whenever it is found. First pick up an outstanding man and give him all facilities and a project. Ask him to build it up and it will be an outstanding success if no further bureaucratic ties are involved. Pandit Nehru knew this and was always in search of men of ability. He declared, "modern life is the offspring of science and technology. It is an inherent obligation of a great country like India, with its traditions of scholarship and original thinking and its great cultural heritage, to participate fully in the march of science which is probably mankind's greatest enterprise today." If what he said years ago had been put into practice science would have moved much faster and the impact would have been felt by all. Let us hope, we will be able to pursue a definite and time-bound programme of science education and research in the country.

APPENDIX I

INDIAN UNIVERSITIES AND INSTITUTIONS DEEMED TO BE UNIVERSITIES

1970-71

Year of establish- ment	S No	University
1	2	3
1857	(1)	Calcutta University
	(2)	Bombay University
	(3)	Madras University
1887	(4)	Allahabad University
1916	(5)	Banaras Hindu University (Varanasi)
	(6)	Mysore University
1917	(7)	Patna University
1918	(8)	Osmania University (Hyderabad)
1921	(9)	Aligarh Muslim University
	(10)	Lucknow University
1922	(11)	Delhi University
1923	(12)	Nagpur University
1926	(13)	Andhra University (Waltair)
1927	(14)	Agra University
1929	(15)	Annamalai University (Annamalainagar)
1937	(16)	Kerala University (Trivandrum)
1943	(17)	Utkal University (Bhubaneswar)
1946	(18)	Satgar University
1947	(19)	Rajasthan University (Jaipur)
	(20)	Punjab University (Chandigarh)
1948	(21)	Gauhati University
	(22)	Kashmir University (Srinagar)
1949	(23)	Roorkee University
	(24)	Poona University
	(25)	M S University of Baroda
	(26)	Karnatak University (Dharwar) ¹
1950	(27)	Gujarat University (Ahmedabad)
1951	(28)	S N D T Women's University (Bombay)
	(29)	Visva Bharati (Santiniketan)
1952	(30)	Bihar University (Muzaffarpur)
1954	(31)	Sri Venkateswara University (Tirupati)

1	2	3	4
1955	(32)	Sardar Patel University (Vallabh Vidyanagar)	
	(33)	Jadavpur University (Calcutta)	
1956	(34)	Kurukshetra University (Kurukshetra)	
	(35)	Indira Kala Sangra Vishwavidyalaya (Khairagarh)	
1957	(36)	Vikram University (Ujjain)	
	(37)	Gorakhpur University	
	(38)	Jabalpur University	
1958	(39)	Varanaseya Sanskrit Vishwavidyalaya (Varanasi)	
	(40)	Marathwada University (Aurangabad)	
1960	(41)	U P Agricultural University (Nainital)	
	(42)	Bardwan University	
	(43)	Kalyani University	
	(44)	Bhagalpur University	
	(45)	Ranchi University	
1961	(46)	K.S. Darbhanga Sanskrit Vishwavidyalaya	
1962	(47)	Punjab Agricultural University (Ludhiana)	
	(48)	Punjab University (Patiala)	
	(49)	Oriasa University of Agriculture & Technology (Bhubaneswar)	
	(50)	North Bengal University (Siliguri)	
	(51)	Rabindra Bharati (Calcutta)	
	(52)	Magadh University (Gaya)	
	(53)	Jodhpur University	
	(54)	Udaipur University	
	(55)	Shivaji University (Kolhapur)	
1964	(56)	Indore University	
	(57)	Jiwaji University (Gwalior)	
	(58)	Ravi Shankar University (Raipur)	
	(59)	University of Agricultural Sciences (Bangalore)	
	(60)	Andhra Pradesh Agricultural University (Hyderabad)	
	(61)	Bangalore University	
	(62)	Jawaharlal Nehru Krishi Vishwavidyalaya (Jabalpur)	
1965	(63)	Dibrugarh University	
1966	(64)	Kanpur University	
	(65)	Meerut University	
	(66)	Madurai University	
	(67)	Saurashtra University (Rajkot)	
	(68)	South Gujarat University (Surat)	
1957	(69)	Berhampur University	
	(70)	Sambalpur University	

1	2	3	4
1968	(71)	Gujarat Ayurveda University (Jamnagar)	
	(72)	Jawaharlal Nehru University (New Delhi)	
	(73)	Mahatma Phule Krishi Vidyapeeth (Rahuri)	
	(74)	Calicut University	
	(75)	Awadesh Pratap Singh University (Rewa)	
	(76)	Assam Agricultural University (Jorhat)	
1969	(77)	Guru Nanak University (Amritsar)	
	(78)	Jammu University (Jammu)	
	(79)	Panjabrao Krishi Vidyapeeth (Akola)	
1970	(80)	Haryana Agricultural University (Hissar)	
	(81)	Himachal Pradesh University (Simla)	
	(82)	Bhopal University	
	(83)	Rajendra Agricultural University (Patna)	
1971	(84)	Tamil Nadu Agricultural University (Coimbatore)	
	(85)	Cochin University	
	(86)	Kerala Agricultural University, Trichur	

Year of Recognition*	S No	Institutions Deemed to be Universities
1958	(1)	Indian Institute of Science (Bangalore)
	(2)	Indian Agricultural Research Institute (New Delhi)
1962	(3)	Gurukul Kangri Vishwavidyalaya (Hardwar)
	(4)	Jamia Millia Islamia (New Delhi)
1963	(5)	Gujarat Vidyapeeth (Ahmedabad)
	(6)	Kashi Vidyapeeth (Varanasi)
1964	(7)	Tata Institute of Social Sciences (Bombay)
	(8)	Birla Institute of Technology & Science (Pilani)
1967	(9)	Indian School of Mines (Dhanbad)

*Year of recognition as an Institution deemed to be a University under Section 3 of the UGC Act, 1956

NOTE —The universities have been arranged according to the year in which the respective Acts were adopted

APPENDIX II

DISTRIBUTION OF COLLEGES ACCORDING TO COURSES OF STUDY

1966-67 to 1970-71

Course of study	Number of colleges				
	1966-67	1967-68	1968-69	1969-70	1970-71
Arts, Science & Commerce	1,915	2,054	2,219	2,361	2,587
Engineering & Technology	105	106	105	106	107
Medicine, Pharmacy & Ayurveda, Nursing and Dentistry	137	141	157	167	176
Law	69	66	77	85	91
Agriculture	54	54	53	54	57
Veterinary Science	20	21	21	23	23
Education	200	202	224	235	258
Oriental Learning	177	179	179	188	236
Others (Physical Education, Music and Fine Arts)	72	76	77	78	79
TOTAL	2,749	2,899	3,112	3,297	3,604

APPENDIX III
STRENGTH AND DISTRIBUTION OF TEACHING STAFF
IN UNIVERSITY DEPARTMENTS/UNIVERSITY COLLEGES
1966-67 to 1970-71

Year	Professors	Readers	Lecturers	Tutors/ Demos- trators	Total
1966-67	1 401 (9.4)	2 370 (15.6)	10 264 (68.9)	915 (6.1)	14 900 (100.0)
1967-68	1 608 (9.2)	2,575 (14.8)	12,110 (69.3)	1 165 (6.7)	17 458 (100.0)
1968-69	1 872 (9.8)	2 834 (14.9)	12 991 (68.2)	1 361 (7.1)	19 058 (100.0)
1969-70	1 903 (9.6)	2 944 (14.9)	13 449 (69.1)	1 461 (7.4)	19 757 (100.0)
1970-71 (Estimated)	2,106 (9.8)	3 202 (14.9)	14 595 (67.9)	1 590 (7.4)	21 493 (100.0)

*Including assistant professors and assistant lecturers

NOTE —Figures within brackets indicate the percentage of the cadre to the total staff in that year

APPENDIX IV
DISTRIBUTION OF TEACHING STAFF IN AFFILIATED
COLLEGES ACCORDING TO DESIGNATION
1966-67 to 1970-71

Year	Senior* Teachers	Lecturers†	Tutors/ Demos- trators	Total
1966-67	11,095 (14.2)	56,164 (71.6)	11,092 (14.2)	78,351 (100.0)
1967-68	11,655 (13.7)	61,861 (72.8)	11,482 (13.5)	84,998 (100.0)
1968-69	12,169 (13.2)	67,320 (73.3)	12,398 (13.5)	91,885 (100.0)
1969-70	12,838 (12.9)	73,360 (73.9)	13,097 (13.2)	99,295 (100.0)
1970-71 (estimated)	13,429 (12.5)	80,144 (74.6)	13,858 (12.9)	1,07,431 100.0

*Including principals.

†Including assistant lecturers

NOTE.—Figures within brackets indicate the percentage of the cadre to the total staff in that year

APPENDIX V

FACULTY-WISE STUDENT ENROLMENT* : UNIVERSITIES AND AFFILIATED COLLEGES

1970-71

Faculty	University Departments University colleges	Affiliated colleges	Total	Percentage in affiliated colleges			
				1970-71	1969-70	1968-59	
Arts	1,32,282	10,75,942	12,08,224	89.1	88.8	87.2	
Science	72,655	7,57,078	8,29,733	91.2	90.6	90.1	
Commerce	28,358	3,01,375	3,29,733	91.4	91.5	91.2	
Education	6,465	47,408	53,873	88.0	88.2	87.9	
Engg/Tech	26,092	69,497	95,589	72.7	72.6	72.4	
Medicine	8,759	89,437	98,196	91.1	92.9	91.2	
Agriculture	21,194	11,475	32,669	35.1	41.1	45.1	
Vet Science	3,504	1,941	5,445	35.6	39.3	43.6	
Law	— 24,920	37,694	62,614	60.2	59.2	61.7	
Others	2,459	3,869	6,328	61.1	68.8	53.9	
TOTAL		3,26,688	23,95,716	27,22,404	88.0	87.7	86.7

*Excluding enrolment in intermediate classes affiliated to the Board of High School and Intermediate Education, U.P.

APPENDIX VI

STAGE-WISE STUDENT ENROLMENT* : UNIVERSITIES AND AFFILIATED COLLEGES

Stage	University Depart- ments/ University colleges	Affiliated colleges	Total	Percentage in affiliated colleges		
				1970-71	1969-70	1968-69
Pre- University	29,054	6,02,544	6,31,598	95.4	95.4	95.3
Intermediate	196	65,142	65,338	99.7	99.8	99.5
Pre- professional	1,209	15,125	16,334	92.6	92.6	92.5
Graduate	1,86,866	16,09,921	17,96,787	89.6	89.3	88.2
Post- graduate	82,652	80,692	1,63,344	49.4	48.3	46.4
Research	11,774	1,838	13,612	18.5	12.7	10.7
Diploma/ certificate	14,937	20,454	35,391	57.8	57.0	56.6
TOTAL	3,26,688	23,95,716	27,22,404	88.0	87.7	86.7

*Excluding enrolment in intermediate classes affiliated to the Board of
High School & Intermediate Education, U P

SELECT BIBLIOGRAPHY

Adisesiah, M S

Let My Country Awake (Orient Longmans, 1970)

Altbach, Philip G

Select Bibliography on Students, Politics and Higher Education (Harvard Centre for International Affairs, 1967)

Student Politics in Bombay (Asia 1968)

Turmoil and Transition Higher Education and Student Politics in India (Lalvani, 1968)

Community of Universities (Cambridge 1963)

Universities British Indian, African - A Study in the Ecology of Higher Education (Cambridge 1966)

Masters and Scholars Reflections on the Rights and Responsibilities of Students (Oxford, 1970)

Universities Under Siege

The Rise of Student Estate in Britain (Macmillan, 1970)

and, Anderson Mary

Higher Education in Nine Countries A Comparative Study of Colleges and Universities Abroad. (McGraw Hill 1971)

Burn, Barbara,
and others

Student Participation (C.L.S., Madras)

Chatterji, S K

The Intellectual in India (Vir Publishing House, 1967)

Chaudhri N C.

She Who Rides a Peacock Indian Students and Social Change (Asia 1961)

Cormack W C.

Adult Education in United States

Crow, Roger de

Universities and National Life (Hind Kitab, 1950)

Dongerker, S R

University Autonomy in India (Lalvani, 1967)

Memories of Two Universities (Mansikata, 1966).

- Durkheim, Emile *Thoughts on University Education* (Popular, 1955)
-
- Suicide*
- Education Commission *Report of the Education Commission 1964-66 Education and National Development* (Ministry of Education, 1966)
- Fucar, L S *The Conflict of Generations*
- Hayden, Howard *Higher Education and Development in South East Asia Vol I Director's Report* (UNESCO, 1967)
- Hunter, Guy *Higher Education and Development in South East Asia Vol III Part I High Level Manpower for Development* (UNESCO, 1967)
- Kabir, Humayun *Student Unrest Causes and Cure* (Orient, 1958)
- Kakar, S and Chaudhri K *Conflict and Choice*
- Kamat, A R *Two Studies in Education* (Asia, 1968)
-
- Wastage in College Education* (Asia, 1963)
- and Deshmukh, A G *Push Comes to Shove* (Mifflin 1970)
- Kelman, Steven *Student Politics* (Basic Books, 1967)
- Lipset S M ed *Politics and Education in India* (Harvard 1970)
- Lloyd and Rudolph S eds *Politics and Education in India* (Harvard 1970)
- Martin, David *Anarchy and Culture*
- McCary, J L *Human Sexuality*
- Mehta, Prayag *The Indian Youth Emerging Problems and Issues* (Somaiya 1971)
- Mehta, Rama *The Western Educated Hindu Woman*
- Noss Richard *Higher Education and Development in South East Asia Vol III Part 2 Language Policy and Higher Education* (UNESCO, 1967)
- Nurullah, Syed and Naik, J P *A History of Education in India During the British Period* (Macmillan 1951)
- Rao V K R V *University Education and Employment* (Asia 1961)

- Reisman, David *The Lonely Crowd*
- Ross, A D *Student Unrest in India*
- Ross, M G ed *New Universities in the Modern World* (Macmillan, 1966)
- Rust, W B, and Harris, H F.P. *Examinations Pass or Failure?* (Pitman, 1967)
- Saiyidain, K G *Universities and the Life of the Mind*. (Asia, 1965)
- Sarkar, Chanchal *The Unquiet Campus* (The Statesman, 1960)
- Shah, A B ed *Education Scientific Policy, and Developing Societies* (Manaktalas, 1966)
- _____ *Higher Education in India* (Lalvani, 1967)
- _____ ed *The Great Debate Language Controversy and Higher Education* (Lalvani, 1969)
- Sl ills, Edward *The Intellectual Between Tradition and Modernity The Indian Situation* (Mounion, 1961)
- Singh, R.K. *Our Universities and Vice-Chancellors A Critique of Indian Education* (1950)
- Sinha and Gangrade *Inter-Generational Conflict in India*
- Taylor H J *Three Studies in Examination Technique* (UGC, 1964)
- Thouless, R H *Map of Educational Research* (National Foundation for Educational Research in England and Wales, 1969)
- Norwegian National Commission for UNESCO *Students Aspiration and Participation* (UNESCO, 1970)
- University Education Commission *Report of the University Education Commission Vol I* (Ministry of Education 1949)
- University Grants Commission *An Interim Report of the Committee on Establishment of New Universities* (1962)
- _____ *Report of the Committee on Students Welfare and Allied Matters* (1967)
- _____ *Examination Reform in Central Universities* (1969)
- _____ *Report on Standards of University Education* (1967)

Report of the Committee on Government of Universities and Colleges Part I *Governance of Universities* (1971)

Van Ree

Colliding Generations

JOURNALS AND MAGAZINES

Education Quarterly (New Delhi)

Minerva (London)

Quest (Bombay)

Seminar (New Delhi)

Times Educational Supplement (London)

Times Higher Education Supplement (London)

Universities Quarterly (London)

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